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I.—NIETZSCHE ON THE PROBLEM OF REALITY.

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As regards the problem of reality, the essential logic of Nietzsche's procedure, so far as it reached any finality—and it really fell short of this, so early was his breakdown (he was forty-five)—appears to have been something like the following; at least his varying and superficially discordant views may be conveniently summarised and arranged in this fashion:—

(1) The world (the world as we commonly understand it) is not real—the world of “science” as little as that of common sense.

(2) We make the world real, *i.e.* posit it as such, have to for life, and none the less delude ourselves.

(3) Is there any reality?

(4) Reality conceived as power and will to power.

I.

The first proposition, *the world is not real*, appears in an interesting anticipatory form in an early fragment, “On Truth and Falsehood in the Extra-moral Sense”. The full-fledged view comes to expression repeatedly later. The world of colours, sounds, resistances, etc., exists only in our mind or feeling.¹ Abstract the sensibilities of sentient beings, and it would disappear. We have no reason to suppose that our images of tree, stone, water, etc., faithfully reflect things outside us.

¹ Cf. *Will to Power*, §§ 516, 545.

They are our creation, in response to stimuli that come to us : to one stimulus we respond with colour, to another with sound, and so on. We may think that we can account for the stimulus by saying that it comes from an object, but all the objects we have any acquaintance with are resolvable themselves into sensations and groups of sensations like the preliminary ones we set out to explain. If we say, for example, that green comes from a tree, we soon become aware that the tree itself (so far as it is separable from its greenness), is but a cluster of other, perhaps more elementary, sensations of the same general kind, such as hardness, resistance, pressure or weight. If we abstract from *all* the sensations, no tree is left. As Nietzsche puts it, the *known* outer world is born after the effect, of which it is supposed to be the cause.¹ Our bodies themselves are, as we know them, groups of sensations like everything else—what they really are in their intimate nature we have not the slightest idea.²

Nor if we consider the more refined world of science, do we leave the subjective sphere. The world of atoms and their movements, which physicists conceive of as a true world in contrast with the ordinary world of sense-perception, is not essentially different from the ordinary world ; its molecules or atoms are only what we should see or handle had we finer senses,—they and their movements are entirely of a sensational nature.³ Moreover, the supposition that there *are* ultimate, indivisible, unalterable units like molecules or atoms is pure invention—it is convenient to have them as a basis for reckoning, and, not actually discovering them, we create them⁴ (I may remark by the way that Nietzsche thinks that the Dalmatian Boscovitch put an end to materialistic atomism, as the Pole Copernicus had done to the notion of a fixed earth⁵). It is the same with “force” or “forces,” in the purely mechanical sense. We know only effects—no one has ever got hold of a force, as mechanical philosophy pictures it.

¹ *Will to Power*, § 479.

² Cf. the early remark : “The sensation is not the result of the cell, but the cell is the result of the sensation, i.e. an artistic projection, an image” (*Werke*, vol. ix., p. 194).

³ *Will to Power*, § 636.

⁴ *Ibid.*, § 624. Nietzsche holds that there is nothing unchangeable in the world of chemistry—e.g., it is quite superficial to say that diamond, graphite, and coal are the same because their elements are the same and because there is no loss in the weights of each in the process of transformation (*ibid.*, § 623).

⁵ *Beyond Good and Evil*, § 12.

Indeed this "force" is a piece of abstraction and a more or less arbitrary creation; we ourselves have a certain feeling of force (of tension, of overcoming opposition) in muscular exertion, and the physicist proceeds to take this force apart from the consciousness and feeling that it is and all its human accompaniments and to put it into the external world—really *there* it is an empty word.¹ Similarly fictitious are the purely mechanical push and pull, attraction and repulsion, imagined to exist between the atoms. Without an aim an attraction or repulsion is an unintelligible thing. The will toward something and to get it into our power, or to protect ourselves against it and repel it, is something we can understand; but the physicist's "attraction" and "repulsion" are words simply.² So as to necessity in the world: we put it there—we add it to the facts, for, because something acts definitely and always so acts, it does not follow that it is forced to.³ Equally mythological are the laws which things are supposed to obey.⁴ Sometimes scientific men give up attempts at explaining things, and content themselves with description—reducing phenomena perhaps to mathematical terms, and causality to relations of equivalence between them; but this mathematicising of things brings us no nearer objective reality, perhaps takes us further away from it—the abstract quantities and their relations being still essentially sensible things, though eviscerated and ghost-like forms of them.⁵

Although Nietzsche does not question the reality of the psychological world itself, he finds that fictitious elements are more or less introduced here. A subject, for example, in the sense of something added to the feelings and thoughts themselves, is fictitious. He criticises "I think," suggesting that "it thinks" would be a more proper expression, but adding that the "it," too, must in the end go: there is no "I" or "it" separate from the thinking—no constant unchanging reality of that sort.⁶ A "substance" of mind goes

¹ *Will to Power*, §§ 619-621, 551.

² Cf. *ibid.*, §§ 622, 627.

³ *Ibid.*, § 552.

⁴ *Ibid.*, §§ 629, 630. Cf. *Mixed Opinions and Sayings*, § 9; *Werke*, vol. xii., p. 30, § 56.

⁵ Cf. *Joyful Science*, § 373; *Werke* (Pock. ed.), vol. viii., p. x; *Will to Power*, §§ 554, 618. I need scarcely add that explaining and comprehending things is not a problem that Nietzsche thinks can be put to one side; cf. the implications in *Ibid.*, §§ 624-628.

⁶ Cf. *Beyond Good and Evil*, §§ 16, 17, 54; *Will to Power*, §§ 481, 488; *Werke*, xi., 185; § 76. Partly also there is a doubling process, as when we say "the lightning lightens" (*Werke*, xiv., 329, § 164).

in the same way;¹ indeed the body comes nearer to being a substantial reality than the mind, though to neither is "substance" really applicable.²

In the same way "things," as any wise distinct from their attributes or activities, are not real; object taken as a "thing" is no more real than subject, matter no more real than mind.³ A "thing" is only a certain sum of activities bound together by a concept or image. "Things," "objects," "subjects," "substance," "ego," "matter" are the metaphysics of the people, by which they seek to transcend the shifting realm of change, alone directly known to us; they want something permanent and this is the way they get it: but the entities are fictitious, imaginary.

Hence, in general, the world we commonly picture is a false one, not real: we fancy that it exists quite independently of us, that we simply find it—and we are mistaken. We may correct our images in this way and that, may make one interpretation of the world succeed another, but we do not get beyond images and interpretations: the data in the case are a meagre quantity, and even they are not reality itself (in the independent sense), but the way or ways in which reality affects us.⁴

¹ *Will to Power*, § 552; cf. *Beyond Good and Evil*, § 12. Even to the theologian, Prof. H. Weinel, the soul is no longer a thing, no "simple and hence imperishable substance," such as science before Kant strove to demonstrate (*Ibsen, Björnson, Nietzsche*, p. 6). Nietzsche finds as little "one soul" as "two souls" in our breast, rather "many mortal souls" (*Werke*, xiv., 37, § 75).

² Cf. *Thus Spake Zarathustra*, I., iv. Nietzsche finds two elements in the notion "substance," on the one hand, the idea of something permanent (see, e.g., *Werke*, xii., 33, § 62), on the other that of a subject (*Ibid.*, xv., 1st ed., 281), so that if "subject" disappears as without scientific warrant, substance must also.

³ *Will to Power*, §§ 551-552.

⁴ *Ibid.*, §§ 12 (A), 522, 542, 602, 604, 616. As to the falsity of the outer world, Nietzsche sometimes uses strong language but it is altogether exact from his point of view; he calls it the product of fantasy, a world of phantoms, poetry, the primitive poetry of mankind (*Werke*, xii., 36, § 69; 170, § 351; *Dawn of Day*, § 118). Indeed, the erroneousness of the world we imagine we are living in, is the surest thing we know (*Beyond Good and Evil*, § 34). Prof. A. Riehl asks how is it possible to speak of falsity and error if one does not know the truth (*Friedrich Nietzsche, der Künstler und der Denker*, 4th ed., p. 130); but Nietzsche says that the destruction of an illusion does not necessarily disclose the truth, and may only make the field of our conscious ignorance wider (*Werke*, xiii., 138, § 318). I may give an instance. There have been mythological explanations of gravitation and electricity. Does our conviction that they are mythological mean that we now have the truth as to the origin of these phenomena, and really understand them, or does it simply mean that the mythological explanations are seen to be

II.

Second, *we make the world real, i.e., hold it so, do so the better to live, and none the less delude ourselves.* The underlying thought is that life, uncertain and changing as it is, needs something on which to stay itself; with this it walks more securely, gains greater confidence. We assume that what we need exists, and, by a subtle process of self-deception, transfer some of our experiences into an objective and supposably unchanging world. As Nietzsche puts it, we project our conditions of maintenance, and turn them into predicates of existence.¹ We convert trees and stones and stars into independent realities and feel thereby at ease and secure. And when science comes with its analysis and makes us aware that these sensible objects cannot exist just as they appear, the same feeling and craving leads us to form (or to acquiesce in the effort of science to form) the idea of elementary kinds of matter, molecules, atoms, or what not, that do not have these palpable subjective references. Indeed practical need plays a large part in determining our beliefs in general. For example, experience gives us a whole host of particulars—how shall we get on with them? If everything is particular, and nothing like another, how can we know what to expect and how to act? Accordingly we classify the particulars or try to, and, so far as they have points of resemblance, we make groups of them—we say, this is the same as that, and reason and act accordingly. But there is no real identity in the world, and the pure theoretic instinct never would have invented such a notion: our ordinary reasoning and logic are but a rough

the result of hasty, superficial reasoning—this, though we are without a single positive idea as to whence the phenomena ultimately come? Hume appears to have held a similar view as to the illusoriness of the world, and for a similar reason. Prof. Norman Kemp Smith makes the following happy summary statement: "Hume's argument rests throughout on the supposition that perishing subjective states are the only possible objects of mind and that it is these perishing states which natural belief constrains us to regard as abiding independent existence. Such belief is obviously, on the above interpretation, sheer illusion and utterly false" (MIND, April, 1905, pp. 169-170). Cf. also Prof. R. B. Perry's *Present Philosophical Tendencies*, pp. 138-139. Nietzsche comes near to justifying the current characterisation of the view as "psychologism," or I might even say "biographism" (if a still more barbarous word may be allowed), in the following: "Man may stretch out as far as he will with his knowledge and seem to himself as objective as possible—in the end he gets nothing from it but his own biography" (*Human, All-too-Human*, § 513).

¹ *Will to Power*, § 507.

rule of thumb.¹ It is practical need, not theoretical interest, that determines the common ideas of causality, substance, subject, ego, being as opposed to becoming, also the ordinary articles of religious faith and conceptions like desert and guilt—they are useful to man and society, therefore we make them valid and true.² Christianity, Nietzsche observes, is necessary to most in old Europe now, and a religious doctrine may be refuted a thousand times, but if necessary, man will still hold to it.³ So valuations of things are necessary to life, and under the workings of similar impulses and by a similar self-deception we put good and bad into things, making them intrinsic there, though as matter of fact all values are of our positing and represent simply conditions of our self-preservation.

In other words, a large range of belief and even of so-called "knowledge" has nothing to do with truth and never came from the search for it.⁴ Nietzsche remarks that those who urge strictly scientific methods of thinking have the whole *pathos* of mankind against them.⁵ And so far does he go in sympathy with "mankind" that he is ready to say that if a choice has to be made between truth and the requirements of life, the requirements of life should come first. Why may not illusions be allowed to stand, he virtually asks,—on what ground do we say that truth has the greater right to be? He is the first thinker, to my knowledge, to turn truth itself into a problem.⁶ He criticises truth for truth's sake as much

¹ Cf. *Will to Power*, §§ 423, 515, 610; *Beyond Good and Evil*, § 191.

² Cf. *Will to Power*, § 497 (as to causality); § 513 (as to substance, subject, etc.); § 354 (as to religious errors).

³ *Joyful Science*, § 347.

⁴ Indeed error is so inwrought into the human constitution that when truth comes into the world, it can hardly live save in combination with error, being too forceless of itself (*Werke*, xii., 47, § 85). "As bloom to the apple, so does falsehood cleave to life" (*Ibid.*, xiv., 269, § 239). In a sense, error is even the presupposition of knowledge—e.g., we measure and judge things in general from fictitious standards, such as "being," "identity," "substance," "permanence," the "unconditioned"—all being "logical fictions" (*Ibid.*, xii., 23, § 39; 24, § 41; 46, § 82; 48, § 89; 208, § 442; xiv., 29, § 53; 31, § 59; *Beyond Good and Evil*, § 4). Even when one has discovered error, one is obliged to act according to it and as if he believed it (*Werke*, xii., 224, § 284). The false presuppositions are embedded in language and we cannot get rid of them, if we would (*Ibid.*, xi., 180, § 69; *The Wanderer and his Shadow*, § 11). I may observe that Nietzsche himself often speaks of sensible phenomena as if they were independent realities, quite like the rest of us.

⁵ *Will to Power*, § 469.

⁶ *The Genealogy of Morals*, iii., 24. The reverence for truth is, he holds, more or less the result of illusion, i.e., of thinking that the values which we put into existence are there independently of us.

as art for art's sake or the good for the good's sake,¹ saying that those who, instead of valuing these things from the standpoint of life, make them supreme over life, are only logical as they postulate another world than this one, since here truth, science at any cost, may be inconsistent with life and an absolute will to truth may be a hidden will to death.² Knowledge (in the strict sense) may actually not be desirable for most; the world as we picture and conceive it under the stress of life's needs may be better than the world as it really is³—our ignorance, even a will to ignorance, may be expedient for us.⁴

So keenly does Nietzsche feel all this, that for a moment he is willing to revise his idea of truth. Wishing to keep the word in its customary honorific sense, he says, let us agree to designate as truth what furthers life and elevates the type of man.⁵ As he once puts it paradoxically (mingling the two meanings of truth in the same sentence), truth is the kind of error without which a definite type of human being could not live.⁶ He tries valiantly to keep to this new definition.⁷ And yet the settled uses of languages prove too much for him and we find him continually relapsing into the ordinary methods of speech. He says time and again that the necessities of life prove nothing as to truth. Schematising for purposes of practical control he still specifically dis-

¹ *Will to Power*, § 298.

² *Joyful Science*, § 344; cf. *Will to Power*, § 608.

³ *Joyful Science* (Preface of 1886), cf. §§ 54, 299, 301, 344; *Genealogy*, etc., iii., § 24; *Will to Power*, §§ 583, 598 ("the truth is ugly"); *Joyful Science*, § 107 ("our final gratitude to art").

⁴ *Will to Power*, § 609. At the same time Nietzsche says this with a tone of pathos. Cf. "Ah, we must embrace untruth, and now the error becomes lie and the lie a life necessity (*Werke*, xii., 48, § 87)! "A question lies heavy on the tongue and does not wish to utter itself: can man consciously hold to untruth, and if he must is not death preferable" (*Human, All-too-Human*, § 34)! Nietzsche does not of course mean that all illusions or errors are beneficial—some may be harmful, even though they make happy for the time, cf. *Will to Power*, §§ 453-454.

⁵ *Ibid.*, § 51; cf. *Werke*, xii., 209, § 442.

⁶ *Will to Power*, § 493; cf. *Werke* (Pock. ed.), VII, xviii ("knowledge is error that becomes organic and organises"). How far this view corresponds with what is now known as Pragmatism, I leave to others more competent than myself to say. Prof. R. Berthelet says that Nietzsche did not know the word, but was the first to perceive distinctly a great part of the ideas so designated to-day (*Un romantisme utilitaire*, vol. i., p. 33; pp. 33-193 of vol. i. are devoted to Nietzsche's theory of knowledge,—see however Prof. A. W. Moore's critical comment, *Philosophical Review*, Nov., 1912, pp. 707-709).

⁷ In accordance with it he speaks at times of "creating" truth (*Will to Power*, § 552).

tinguishes from knowing.¹ Is it really knowing a thing, he asks, to class it with something else with which one is already familiar and so find it less strange?—this when both alike may be unknown, the things we are most familiar with being sometimes the least known, inasmuch as they excite no curiosity and we fancy we know them already.² Comprehending, explaining, understanding—that alone fills out Nietzsche's idea of knowing; and classifying, not to say mathematising, only touches the borders of the subject.³ That a belief is convenient, practical, even necessary, proves nothing as to its standing in *foro scientia*. The law of causality, for example, may, like other so-called *a priori* truths, be so much a part of us that unbelief in it would cause our undoing—is it therefore true? As if truth were proved by our remaining alive!⁴ The idea of an "ego" may be indispensable, and for all that be a fiction.⁵ The ideas of a given type of being simply prove what is necessary for it, and the ideas may vary as the types vary. The Euclidean space may, like our kind of reason, be simply an idiosyncrasy of certain kinds of animals—other kinds might find necessary a space of four dimensions and have a different type of logic from the human.⁶ So with valuations. The valuations of one species, being from the standpoint of its particular interests, may differ from those of another species, the interests of which are different; or, if the ruling impulses

¹ *Will to Power*, § 515; cf. *Werke*, xiii., 52, § 123.

² *Joyful Science*, § 355; cf. *Will to Power*, § 479.

³ Cf. the distinction involved in *Ibid.*, § 503, where it is said that the whole apparatus of so-called knowledge is an apparatus for abstracting and simplifying—its aim being not knowledge proper, but the acquiring of control. Practical interpretation is distinguished from explanation in *ibid.*, § 604. Ordinary logic is set down as a falsifying process, presupposing as it does identical cases: it falsifies [theoretically] and carries through its [false] point of view [practically]—it does not proceed from the will to truth (*ibid.*, § 512). It must be admitted that Nietzsche does not always hold to this purely theoretic idea of knowledge. He says, for instance, in one place, that there is no pure willless subject of knowledge, only a perspectivist seeing or knowing (*Genealogy*, etc., iii., § 12); again, that it is a fatal mistake to posit a peculiar impulse to knowledge, which, without reference to advantage and injury, goes blindly after the truth, and then to separate from it the whole world of practical interests (*Will to Power*, § 423). But the inconsistencies here are perhaps no greater than in his varying language as to "truth".

⁴ *Ibid.*, § 497.

⁵ *Ibid.*, § 483; cf. *Beyond Good and Evil*, § 4, *Werke*, xiv., 16, § 24 (where the falsity of a judgment is said to be no objection to it, and that judgments most false may be the most indispensable).

⁶ *Will to Power*, § 515; cf. § 487, *Werke* (Pock. ed.), VIII., x. Nietzsche even makes reflections on the "law of non-contradiction" (*Will to Power*, §§ 515-516).

vary, differing estimations of ends and means, different interpretations of historical events, different world-perspectives generally may result.¹ It is naive to take *man* as the measure of things, either theoretically or practically.² We do not know but that some beings might experience time backwards, or forwards and backwards alternately, whence would result other directions of life and other conceptions of cause and effect than those with which we are familiar. It is a hopeless curiosity, indeed, to wish to see round our corner, but Nietzsche thinks or hopes that at least we are modest enough not to claim that our perspective is the only one. He even says that by reflections such as these the world becomes infinite to him again, *i.e.*, capable of an infinite variety of interpretations,—though he has no notion of worshipping the new infinity, since it may include *undivine* interpretations as well as the other kind.³ All the interpretations may be justified relatively to those who make them, and none have strictly objective warrant. But then the question arises (and this is the third point):—

III.

Are there any objective things, *is there any reality* (in the independent sense) at all? Nietzsche may have wavered here at times—in any case his language is not always consistent. Still two things stand out with tolerable distinctness. One is, that his very language about falsehood, error, illusion, indicate that in the background of his mind lurks the idea of something or other, the knowledge of which would be truth. Indeed he explicitly says as much—as, for example, in speaking of the possibility that the “real make-up” (*wahre Beschaffenheit*) of things may be so harmful to life, so opposed to its pre-suppositions, that illusion is needed to make life possible.⁴ He even uses Kantian and Schopenhauerian language at times, speaking of the “intelligible character” of the world, *i.e.*, the world “seen from within”.⁵ Zarathustra is described as willing to see “the ground of all things” and the ultimate ground.⁶ The other thing is the

¹ *Will to Power*, § 567; cf. §§ 481, 605.

² Cf. *Dawn of Day*, § 483; *Joyful Science*, § 249; *Beyond Good and Evil*, § 3; *Will to Power*, § 12 (B).

³ *Joyful Science*, § 374.

⁴ *Will to Power*, § 583 (A).

⁵ *Beyond Good and Evil*, § 386. In *Will to Power*, § 516, the question is raised whether the axioms of logic are adequate to the real or can even give us the idea of it.

⁶ *Zarathustra*, iii., 1. Cf. *Beyond Good and Evil*, § 12, where the new psychologist, after putting an end to superstition about the soul and fall-

practically constant recognition of an original mass or chaos of sensations. They are indeed our creation, but in response to stimuli—and the stimuli Nietzsche distinctly does *not* contemplate as self-generated.¹ They do not come from the outer world as we picture it, for this is an after-product of the sensations themselves; all the same we “receive” them and Nietzsche is inevitably driven to ask, whence?²

The idea of reality outside us is thus inexpugnable to him. What it is, what its constitution, is another matter. It is not this familiar world of common sense; it is not the world of atoms and denatured “forces” of popular science; nor is it the world of purely quantitative and mathematical relations of refined science. Still more, it is not a world of “things-in-themselves,” as this phrase is often bandied about by philosophical writers who think to refute Kant by showing that the idea of things out of any kind of relation is absurd; neither Kant nor any other realist worth mentioning has ever meant by independent reality *that*. Things are always in relation—and when conceived of (if they *can* be conceived of) as isolated, they are a pure invention of the mind, an illusion.³ Most emphatically it is not a world of pure and changeless being such as Schopenhauer dreamed of. Such “being” is the product of a mind ill at ease with the change and suffering in the world and conjuring up an order of things from which such features are absent, *i.e.*, it is the offspring of subjective need, and Nietzsche distrusts (at least for his own account) constructions that come from any other need or impulse than the theoretic or knowing one itself.⁴ Even moral needs are no safe basis for construction, not to speak of the needs of happiness, comfort, or inspiration.⁵

ing into a new desert and mistrust, is spoken of as at last learning to *invent*, and, who knows? perhaps to *find*.

¹ Prof. Raoul Richter (*Friedrich Nietzsche, Sein Leben und Sein Werk*, 2nd ed., 282) refers to a passage (*Werke*, xv., 295, of the original edition), in which Nietzsche speaks of our not receiving, but ourselves positing sense-perceptions. But the perceptions are to be distinguished from the stimuli (*Reize*) themselves—the former we produce, but the latter we receive.

² Cf. *Will to Power*, § 569 (the ambiguity in this passage turns about the term “things,” which Nietzsche, as we have already seen, regards as a subjective fiction; that we are to a certain extent passive and acted upon is implied throughout).

³ Nietzsche makes a running fire on both “things-in-themselves,” and “things,” sometimes misunderstanding the former himself (*Ibid.*, §§ 552-569; cf. § 473, *Joyful Science*, § 354).

⁴ Cf. *Will to Power*, §§ 708, 585, 576.

⁵ Cf. the reflections on Kant, *Ibid.*, § 410; on Hegel, *ibid.*, § 416; on philosophers in general, *Beyond Good and Evil*, § 6, *Will to*

What is left, then? one may ask. There is evidence that Nietzsche was for a time in sore perplexity. The very extreme of scepticism and uncertainty as to both metaphysics and morals is pictured in "The Shadow" in *Thus Spake Zarathustra*—Nietzsche had been that shadow and had said to himself in bitter irony: "Nothing is true, everything is permitted".¹ There is nothing in things that we have not put into them, science, too, being this sort of child's play.² We can conceive only a world that we ourselves have made—if it appears logical, it is because we have logicised it.³ There are no facts, only interpretations; we cannot fix any fact in itself—perhaps it is absurd to wish to.⁴ We have no organ for knowing [in the strict theoretic sense, *erkennen*], we know [*"wissen," oder glauben oder bilden uns ein*] only what is useful for our human herd or species—and even as to this utility we only believe, cherish an imagination, and perhaps a stupid one with which we shall sometime perish.⁵ Such are some of the extreme expressions of his despairing mood. And it must be admitted that along the ordinary lines of objective search and analysis Nietzsche finds no way of meeting the scepticism. Though he has the general idea of objective reality, he cannot give any content to it. Though he recognises certain primitive data of sensation (or rather of stimulation), these data are so primitive, so far away from anything like our actual world in which data and interpretation are inextricably combined, that they might almost as properly be designated by an x or an interrogation mark as the original realities themselves. What Nietzsche really now does is to view the whole problem from a new angle. And here I pass to the fourth point:—

Power, § 412. As to needs of happiness, comfort and so forth, see *Ibid.*, §§ 425, 36, 171-172, 455; *Beyond Good and Evil*, § 210; *Genealogy*, etc., i., § 1; iii., § 24. Nietzsche even says that "the desirable" is a canon without meaning in relation to the world as a totality (*Will to Power*, §§ 709, 711). Nor are clearness and irrefutableness really standards of truth; that clearness should prove truth is perfect childishness (unclear ideas may be nearer truth) *Ibid.*, § 358; as to "irrefutable" views see *ibid.*, §§ 535, 541.

¹ *Zarathustra*, IV., ix.; cf. *Genealogy*, etc., iii., § 24; in *Will to Power*, § 598, the idea that there is no truth (called the nihilistic belief) is treated as a sort of recreation for one who is ever struggling for truth and finding it ugly—with the implication, then, that after the recreation one goes on in the struggle.

² *Will to Power*, § 606.

³ *Ibid.*, §§ 495, 521.

⁴ *Ibid.*, § 481; cf. §§ 603-604 (no fixed datum, everything being fluid, unseizable, what comes nearest permanence being our opinions).

⁵ *Joyful Science*, § 354.

IV.

Reality as power and will to power. Perhaps some of the steps by which he reached this conception, were these: (1) It came over him at times that his fellow-men were different from things in general. Thorough-going idealism is necessarily solipsistic. If we (each of us) think that nothing exists outside our sensations and thoughts, then our fellow-beings exist only in our sensations and thoughts, *i.e.*, have no independent being of their own; and though this might not matter greatly, so far as each other's bodies are concerned, every one would probably feel that to make his thinking or feeling dependent upon the thinking and feeling of another was absurd—indeed, no clear-headed person will assert that he feels another's feeling or can, or that another can feel his (we only reconstruct one another's feelings and feel them in imagination). Opposed as Nietzsche was in a general way to the idea of "another world," a "transcendent world," he came to see that, strictly speaking, other souls were themselves another world, a transcendent world, and he makes Zarathustra say so.¹ Once he formally argues the matter: "For a single man the [independent] reality of the world would be without probability, but for two it becomes probable. That is, the other man is an imagination of ours, entirely our "will," our "idea": and we are again the same in him. But because we know that he deceives himself about us [in thinking that we are simply his imagination] and that we are a reality despite the phantom-picture of us which he carries in his head, we conclude that he too is a reality despite our imagination of him: in short, that realities outside us exist."² (2) Another line of reflection came to him: Although distinguishing absolutely between "true" and "false" in the world at large is a difficult and perhaps impossible thing, setting up an end ourselves and trying to make things go that way is another matter—and yet just this is what every strong man does to a greater or lesser extent, indeed what practically every one tries to do.³ The very arranging, classifying, interpreting, valuing of the world and of things in it, about the objective validity of which Nietzsche is in doubt, is an incident to this end. The most wonderful of all things is not the world in its mystery, or the truths or values about which we dispute, but what is immediate and best proved, our own willing, valuing, creative

¹ *Zarathustra*, I, iii. ; III., xii., § 4 ; xiii., § 2.

² *Werke*, xi., 180, § 68.

³ *Cf. Will to Power*, § 605.

selves.¹ The extraordinary turn is accordingly made that the factor the action of which breeds scepticism as to our possession of objective truth, *viz.*, our will to power, and exercise of it, is that about which scepticism is impossible; the very changing of things which it works, a change so complete that we hardly know whether any of the original lineaments of things are left, is a proof of its reality.²

Here then is something to start with. Nietzsche feels this power in himself and thinks that it is really the bottom thing in him; and as he is not solipsist, he thinks that there are similar centres of power in other men. And turning his thought to the world at large, the idea occurs to him, may not animals and plants and even insensate things be centres of power in varying measures and ways? May not the world in its real being be made up, not of "things," substances, subjects, egos, atoms, causes and effects, spatial quantities and movements, but of these centres of power more or less conflicting and struggling with one another?³ Each being a will to power seeks to prevail, and is only prevented by others that want to do the same; each estimates all that is outside from its own standpoint, and to the extent it is conscious, builds up a world accordingly—images, concepts, categories and all; each is real and its created world is real (at least, till another centre of power puts an end to one or the other or both), and this is what and all that reality means.⁴ The question as to

¹ *Zarathustra*, I., iii.

² "The 'falseness' in things is to be explained as result of our creative force!" (*Werke*, xiv., 269, § 39).

³ Cf. *Will to Power*, § 635 (not things, but dynamic quantities, in relations of tension to one another, their essence consisting in the relations, in the mutual interaction). Cf. Prof. August Dorner's happy statement, "in this actual world there are no individuals, no species, and, strictly speaking, also no wills, but only actions and reactions, centres of action and reaction, and the word 'world' signifies only the total aspect of these actions" (*Pessimismus, Nietzsche und Naturalismus*, p. 137).

⁴ Cf. the striking summary paragraph, *Will to Power*, § 567: each centre of force has its perspective for the rest of the world, *i.e.*, its quite definite valuation, and its way of acting and resisting. The "apparent world" reduces itself to specific sorts of action proceeding from such centres. The "world" is only a word for the total play of such actions. *Reality* consists in just this particular sort of action and reaction of each individual to the whole. There hence remains no shadow of right to speak here of *appearance*. There is no "other," no "true," no essential being—therewith would be designated a world *without* action and reaction. The contrast between the apparent and the "true" world becomes accordingly a contrast between "world" and "nothing". Cf. also *ibid.*, § 708 (becoming is not appearance; it is perhaps the world of *being* that is appearance).

the truth of the estimates or images or concepts, save as it is a question of what each can make good or can successfully act by, is irrelevant and without meaning, since estimations, images, concepts only exist in relation to the power that creates them and seeks to effectuate itself by their aid. Sensations, or rather the stimuli to which we react with sensations, become then construable, as a part of the effect which some outside centre of power makes upon us—it is a kind of signal that another power is there. By the sensations, the memories we keep of them and the ordered picture of the world we draw up, we know a little better how to act in relation to these unseen friends or foes. It is, however, only in the initial semi-physical contact that we are in direct, first-hand relation to them, and our sensations themselves need not have the slightest resemblance to the original realities.¹

V.

Such is the construction which Nietzsche offers in its most general terms. It is an hypothesis purely—he so speaks of it.² To take it as a dogma is to misconceive it and miss its value (whatever value it has). It is something to mull over—and then to accept or no according as it appears to cover the ground and meet theoretic requirements. (*Other requirements have to be left out of account by one who takes up the problem in Nietzsche's spirit.*) I shall be content in what follows if I can make the hypothesis reasonably clear.

In the first place, the "will to power" is a theoretic proposition. By many it is taken as an ethical standard (and rather a brutal one); but primarily it is with Nietzsche an

¹ Cf. *Will to Power*, § 569. By will Nietzsche means not so much a fixed entity or faculty, as a moving point—he speaks of "*Willens-Punktationen*" that continually increase or lose their power (*Ibid.*, § 715). Again, though a *who* that feels pleasure and wills power (*i.e.*, a single subject) is not necessary, there must be contrasts, oppositions, and so relative unities (*ibid.*, § 693). When Nietzsche rejects will as illusion (*cf. Beyond Good and Evil*, § 19), Prof. Richter remarks that he has in mind the *consciously* aiming will conceived as something simple (*op. cit.*, p. 225). On the other hand, Nietzsche uses will distinctly in the sense of something that selects and accomplishes (*Will to Power*, § 662), and expressly dissents from Schopenhauer's view of the will as desire and impulse merely—will, he says, deals with ordinary impulses as their master (*ibid.*, §§ 84, 95, 260, 668). Still he does occasionally speak of will to power as desire (*ibid.*, § 619). Ultimately it is neither a being or a becoming, but a *pathos*—from which a becoming or an action results (*ibid.*, § 635; *cf. Werke*, xiii., 210, § 483).

² *Will to Power*, § 869.

analysis or interpretation of reality—a theory as to its last elements.¹ Secondly, it is manifest that it is not merely power on a physical level that is in his mind; indeed, it may be questioned whether the discovery that instincts of power lie behind a large range of *mental* operations and also play an important part in the varying *moralities* of men, did not contribute as much to the formulation of Nietzsche's doctrine as anything else. Further, the view is relatively new in his intellectual history. It is, in a sense, a metaphysical view and stands in contrast with the purely critical and positivistic attitude of his middle period. Then he had spoken of the idea that will is the essence of things as "primitive mythology;"² now he is ready to argue from analogy, and frankly takes man as his starting-point.³ One might almost call it a return to the metaphysics of his first period, except that now he is less assured of the subjectivity of space and time (time at least he asserts to be objective) and the will is many, not one—the Primal Will (*Urville*), that eases itself of its pain by looking at itself objectively and so creating the world, being left out of account. The view might be described as Pluralistic Voluntarism.⁴ The question of the

¹ Nietzsche's projected book had originally as its full title *Der Wille zur Macht, eine Auslegung alles Geschehens* (*Werke*, Pock, ed., IX., xiii.).

² I am compelled to borrow here from Riehl (*op. cit.*, p. 60). Indeed Nietzsche still says that the view that every object seen from within is a subject, belongs to the past (*Will to Power*, § 474; he probably means a *conscious* subject, or else uses subject in the technical sense already criticised). On the other hand, in *Ibid.*, § 658, he speaks of "thinking, feeling, willing in all that lives," and in *Zarathustra*, IV., xi., he comes near popular animism in speaking of the pine tree as reaching after power, commanding, victorious, etc.—though the language is poetical.

³ *Will to Power*, § 619.

⁴ Julius Bahnsen, an early follower of Schopenhauer, seems to have had a similar view, reality being taken by him as "a living antagonism of mutually crossing forces or acts of will (*Der Widerspruch*, i., 436). The term "Voluntarism," Rudolf Eisler says, was first used by Ferdinand Tönnies in 1883, Paulsen in 1892 having brought it into currency (*zur Geltung*); cf. Eisler's *Wörterbuch der philosophischen Begriffe*, art., "Voluntarismus". Wundt's view, as stated by Prof. O. Külpe (*Die Philosophie der Gegenwart in Deutschland*, 3rd. ed., pp. 102-103), and also the reasoning by which he arrives at it, are in general like Nietzsche's: "All ideas (*Vorstellungen*) of objects rest on an effect that the will experiences; it suffers in that it is affected, and it is [in turn] active in that the suffering stirs it to an idea-producing activity. The object, however, that affects the ego is in itself unknown. We can only infer from our experience that what causes (*erregt*) suffering must itself be acting. Since there is absolutely no other activity known to us than that of our will, we can trace our suffering back only to some foreign will, and so what happens in general to the reciprocal action of different wills. The world may therefore be interpreted as the totality of will-activities, which in the course of their determination of one another . . . come to

origin of the many wills is not even raised—so that, if Schopenhauer's system is metaphysics in the second or highest degree, Nietzsche's is so only in the first;¹ still it is metaphysics so far as this means a transcending of experience and the phenomenal realm in general. Certain positivist writers regard Nietzsche as going backward—reversing in his procedure Comte's law of the three stages.²

The starting point is, as I have said, man. The bottom thing in him is his impulsive, willing nature. Each impulse, indeed, would rule if it could—the human problem being to establish an order of rank or precedence between them. Mind itself is of a commanding nature—wants to rule.³ Philosophy, which seeks to arrange, grasp, comprehend the world and establish values in it, is the most sublimated form of the will to power.⁴ One who thinks that philosophy has nothing to do with power should grapple with a philosophical problem, or with Nietzsche himself—and he will soon see whether power is needed. Nietzsche regards the philosopher as pre-eminently an establisher of values. The scientific specialist is a tool—a precious one, one of the most precious that exists; but his place is in the hands of one more powerful than he, who uses him—the philosopher. The philosopher is the Cæsarian trainer and strong man of culture.⁵ The saint is interpreted in similar terms. He is commonly thought to turn his back on power, but he is a supreme type of power, and of the will to it, according to Nietzsche. He is revered by the mightiest—why? Because, Nietzsche answers, they feel in presence of one of their own kind—whose power, however, turns inward rather than outward.⁶ Even love is an exercise of power, to Nietzsche—it gives the highest feeling of power; and Jesus, in telling his disciples to call no one master, really recommended a very proud life under the form of a poor and serving one.⁷ Nietzsche thinks that the sense of power is what in varying form we all crave, that the love of power is a central, universal instinct: he defines psychology as a doctrine of the development of the will to power and of the forms it takes.⁸ Such is his analysis of human nature.

arrange themselves in a developmental series of will-unities of varied content."

¹ This is the distinction made by Richter, *op. cit.*, 283.

² Zoccoli, Lasserre and others, as reported by Mügge, *Friedrich Nietzsche: His Life and Work* (3rd. ed.), p. 316.

³ *Beyond Good and Evil*, §§ 6, 230.

⁴ *Ibid.*, §§ 9, 211.

⁵ *Ibid.*, § 207.

⁶ Cf. *ibid.*, § 51.

⁷ *Will to Power*, §§ 176, 169.

⁸ "Morphologie und Entwicklungslehre des Willens zur Macht" (*Beyond Good and Evil*, § 23).

But the driving force in us, Nietzsche thinks he sees traces of, though in simpler form, in the lower ranges of life. Indeed in us it is something more elemental than conscious choice or than consciousness itself. It *becomes* conscious on occasion, but itself lies deeper, and in a more or less unconscious form Nietzsche imagines that it exists in animals and plants, and indeed wherever there is activity.¹ He does not attempt to demonstrate this inference—he attempts no *demonstration* even of the primacy of will in man, he has not unsaid his old criticism of Schopenhauer to the effect that we have no real first-hand knowledge of will:² it is all, whether as regards man or as regards lower beings, hypothesis, a view without pretence to certainty, speculation, as perhaps any kind of metaphysics must be.

VI.

Let me give the interpretation in still further detail—beginning with the lowest forms of existence.³ Physical motion, for example, is a subjective phenomenon—an alteration in our sensations: the reality in the case is a change in the relations of two or more centres of power—a change that is

¹ If we bear this in mind, we may to a certain extent explain Nietzsche's apparently contradictory views as to the place of conscious will in man (and in the world in general). He uses "will" sometimes in the sense of conscious will, in which sense it is not universal or elementary (*cf. Dawn of Day*, § 124), but again as practically identical with natural forces, the urge and inner ground of all life and activity. Consciousness has little part in physiological adaptations and organisation—it is a fitful, broken, atomistic thing at best and more a resultant than a cause (*cf. Will to Power*, §§ 523, 526). It comes when there is need of it, and is used by forces that may in turn dispense with it when it has done its work. It is these deeper forces that are will proper (*i.e.*, something commanding, imperative, bent on rule), the same in nature as in man. I do not mean that considerations of this course meet all difficulties: some of his contradictions are perhaps incapable of resolution, *e.g.*, that between a mechanistic and a teleological view of life. Nietzsche is now inclined in one way and now in another (*cf. Werke*, xiv., 353, § 215, with *Beyond Good and Evil*, § 36; *Werke*, xiii., 170, § 392; *Will to Power*, § 712). Still his drift as a whole, and indeed the particular significance of his doctrine of will to power, are anti-mechanistic. In *ibid.*, § 712, he almost suggests the Bergsonian view, "Absolute exclusion of mechanism and matter: both only forms of expression for the lower stages, the least spiritual shape that the will to power takes" ("die entgeistigste Form des Affekts, des 'Willens zur Macht'"). Had Nietzsche lived, he might have produced an articulated view to this effect.

² He rather reasserts it (*ibid.*, §§ 475-478). Richter, *op. cit.*, 274, comments on the difficulty presented by these varying views.

³ *Cf.* the language of *ibid.*, § 712.

symbolically revealed to us, being translated into the sign-language of eye and touch.¹ The world of mechanics in general is sign-language [unmeaning and unexistent apart from us or beings like us] for will-quanta struggling with one another, some perhaps temporarily overcoming [which are real, quite independent of us].² The unintelligible forces, attractions and repulsions that physicists speak of now get some meaning, construed as kindred impulses in ourselves; they reach out to control or they repel foreign control much as we do.³ The same may be said of chemical action and reaction, which are always of a specific character—the element of preference or choice (according to the nature of the elements in question) cannot be left out of account in explaining them.⁴ “Qualities” are the expression [sensations in us] of definite kinds of action and reaction, and Nietzsche suggests that quantity may be the outcome of quality (of the objective counterpart of quality)—the centre of power wishing to become more, to grow, to attain greater size.⁵ Causality appears in a new light. How, we ask, *can* two contrasted things, such as mind or will in us and an object outside us, affect one another? Nietzsche’s view makes them fundamentally alike—will acts on will everywhere, not on something foreign to it.⁶ Moreover, causality is not so much a relation of succession, as a working in and upon one another of two powers or wills, with its natural and inevitable result, either of a compromise, or of conquest on one side and subjection on the other. There is no cause and effect in the sense of an antecedent and consequent, nor is there a transference of energy from one thing to another, but rather a measuring up of forces against one another and a result—and this is why cause and effect, as ordinarily conceived, are rated a fiction, equally with “substance,” “atom” and the rest.⁷ Further, the ordinary idea of causality is of an unending process of change: an effect once reached becomes the cause of another effect and so on. But why, Nietzsche asks, need this be so, *why* might not a state once reached

¹ *Will to Power*, §§ 625, 634, 689 (motion eine Bilderrede, mechanics eine blosse Semiotik).

² *Ibid.*, § 689.

³ *Ibid.*, § 619.

⁴ *Ibid.*, § 636.

⁵ *Ibid.*, § 564. §§ 563 and 565 derive quality from differences of quantity—an apparent contradiction, only obviated in case “quality” here signifies something different, namely a more or less æsthetic valuation, a human idiosyncrasy. It must be remembered that *Will to Power* is made up of notes and memoranda merely, and that these are arranged, and more or less arbitrarily arranged, by the compiler.

⁶ *Beyond Good and Evil*, § 36; *Will to Power*, §§ 490, 554, 658.

⁷ *Ibid.*, §§ 631, 338, 617.

continue indefinitely, why would not the impulse of self-preservation itself tend that way—why, unless aside from self-preservation, there is an instinct in every living thing to be more and greater, to expand and enlarge itself, in short an instinct for power and domination?¹

Peculiarly interesting is the revision of biological notions that ensues. Mere self-preservation is not the life-instinct proper.² The will of living creatures is a special case of will to power. It is a will, however, not only to dominate (this all power strives for), but to dominate by incorporating, by making the foreign substance of power an integral, though subordinate, part of itself.³ This is manifest in hunger and the over acts of seizure—the living thing perhaps takes more than it can actually appropriate.⁴ Exploiting, stealing belongs thus to its nature. Accordingly life is radically misconceived when it is taken as mere adaptation to environment; "adaptation" is something secondary—is reaction, while life is action, activity itself (self-activity, one might say, though Nietzsche does not use the phrase—he does say "spontaneous" activity)—activity positive, aggressing, an "attacking, encroaching, freshly-interpreting, freshly-directing and shaping" force.⁵ To be controlled by outer conditions, or mere accommodation to them, is, for Nietzsche, a sign of decadence—he thinks that Darwin and Spencer both overvalue outer conditions in their view of life.⁶ Indeed, as he conceives the matter, life *wants* opposing outside forces—wants them to feel its power over them. In this way he interprets the pseudopodia of lower forms of life: the living substance is reaching out after something *on which to expend its power*, and appropriation is merely the consequence.⁷ And when it takes in more than it can really

¹ *Will to Power*, § 688.

² *Beyond Good and Evil*, § 13; *Will to Power*, §§ 650-651.

³ *Ibid.*, § 681.

⁴ Hunger to merely replace what has been lost Nietzsche puts in a secondary place (*ibid.*, §§ 651-652, 656).

⁵ *Genealogy*, etc., ii., § 12.

⁶ Cf. *Will to Power*, §§ 44, 49, 70, 71, 681; *Werke*, xiv., 215, §§ 432-433; *Will to Power*, § 647. This does not mean that Nietzsche did not recognise the influence of environment—cf. as to the shaping of races, *Werke*, xiv., 233, § 787. All the same, "the psychology of these M. Flauberts is in *summa* false: they see always simply the action of the outer world and the ego being formed (quite as Taine?),—they know only the weak in will, in whom desire takes the place of will" (*ibid.*, xiv., 199, § 391). Again, "The theory of environment, now the Parisian theory *par excellence*, is itself a proof of a fateful disgregation of personality" (*ibid.*, xiv., 215, § 434). Cf. Dorner's comment, *op. cit.*, p. 139.

⁷ *Will to Power*, §§ 656, 702, 694.

control it proceeds to divide itself—as two, it can still control. There is, however, no “altruism” in the process. As “nourishment” is something secondary, the original impulse being simply the will to close in on whatever is at hand, so self-division or propagation is equally derived—where one will does not suffice to organise what has been appropriated, another arises.¹ Structure, organisation, is another result: it is necessary to the end of disposing of what has been appropriated—its meaning is in arranging, ordering, putting in place to the end of dominance and use.² Incident to all life is power that commands and power that obeys—whatever does not command must obey, *i.e.*, be used, become subservient.³ Here is the foundation for the distinction between means and end in an organism. The superior power overcomes the lesser, incorporates it, gives it its place, making it a means to its own end.⁴ Hence the definition of an organ—something that would otherwise be independent is turned into a means, an instrumentality. For example, something that happens to be more or less suitable becomes an eye for the organism, something else a foot or hand, something else still apparatus for digestion and so on; they may not have been formed for these purposes, but the superior power turns them to account in these ways,⁵ just as one man may make others his slaves or as the state may convert this or that individual into a tool or agent.⁶ Wherever we find a thing that serves a purpose and is useful, “a will to power has made itself master of something less powerful, and of its own motion has stamped the meaning of a function upon it”.⁷

¹ *Will to Power*, §§ 653-657. In *ibid.*, § 680, the sexual instinct is viewed as an expression of the strength or power of an individual, his maximal expression of power (rather than simply as a necessity for the race), which is superficially inconsistent with the view of propagation as the result of limited power in *ibid.*, § 654.

² *Ibid.*, § 642.

³ *Ibid.*, § 492; cf. *Zarathustra*, II., xii.

⁴ *Will to Power*, § 552.

⁵ Nietzsche says as against Darwinism that the utility of an organ does not explain its rise, for, during the greater part of the time it was forming, it may not have tended to preserve the individual or been useful to him, least of all in the struggle with outer conditions and enemies, *ibid.*, § 647; cf. *Genealogy, etc.*, ii., § 12, where it is explained that the origin of a thing may have nothing to do with the use to which it is put by a superior power.

⁶ There is no mechanical necessity in the relation of the parts of an organism—much may be commanded that cannot be fully performed: hence strain, *e.g.*, of the stomach (*Werke*, xiii., 170, § 392; cf. 172, § 394).

⁷ *Genealogy, etc.*, ii., § 12 (this holds good of a legal institution, a social custom, a political practice, a religious form, or an eye or a hand).

If we do not read the organic world in terms of power, *i.e.*, of controller and controlled, of master and servant, there is little sense in speaking of organs, functions. All language about the "meaning" of a thing implies that a superior power has given it a meaning, *i.e.*, got control of it and assigned it a place in relation to its own ends. As already said, this meaning may have nothing to do with its origin or essence—a thing may in the course of time have various meanings, depending on the nature of the power that gets control of it. Accordingly, the "evolution" of a thing (whether an organ of a body or a custom of society) is by no means necessarily progress toward a goal prefigured in its nature, still less a logical movement along the shortest lines and accomplished with the least expenditure of force, but rather a succession of processes of subjugation which it undergoes, the changes going more or less deep and having no necessary connexion with one another—to which may be added its own resistances, attempts at change of form in self-defence and any successes it may win. The form [of the organ or custom] changes, flows, and the "meaning," purpose, still more so. Even in an individual organism, it is not otherwise: with every essential growth of the whole, the "meaning" of single parts shifts also—under given conditions, a partial perishing of some, a reduction in the number of others (for example, an elimination of intermediate organs) may be proof of the growing power and perfection of the whole. In other words, degeneration, losing of meaning and purpose, or death, may belong to the conditions of actual progress—something that ever appears in the form of a will and way to greater power and is accomplished at the expense of numberless lesser powers. The greatness of an advance may, indeed, be measured by the amount of what is sacrificed to it. For example, the mass of mankind sacrificed to the growth of a single, higher, stronger species of man—that would be an advance.¹

This relation of controller and controlled in any form of organic life involves what Nietzsche calls an order of rank (*Rangordnung*). It is a conception that plays a great part in his social speculations; but it originates in the general biological field.² The human body itself involves an order of rank; there are higher and lower in it, ends and means—it is teleologically constituted, though the teleology comes not from God or from a vague thing called Nature, but is established by the supreme controlling force in the body

¹ *Genealogy*, ii., § 12.

² *Will to Power*, § 552.

itself: Nietzsche speaks of the "lower world" there and of "the higher functions and functionaries for ruling, anticipating, predetermining,"—for "our organism is oligarchically arranged".¹ The mind is a part of the ruling, determining forces, and an instrument for accomplishing that on which they are bent. Every centre of power in a sense measures and estimates other power outside it, but when this is done in clear consciousness, the measuring may be surer and more effective.² In the development of mind and consciousness, the need of communication between those with common interests plays an important part. Mind grows in intercourse and with reference to the needs of intercourse—hence indeed the limitations of consciousness as well: we see the general, the communicable with greater distinctness than the altogether individual and specific (*i.e.*, our individual experience, which may be incommunicable).³ But consciousness is not an end in itself, but a means to the heightening of power.⁴ Nietzsche even suggests that there may be an oligarchy in the mind itself, there being not necessarily *one* subject there, as we commonly think, but several, the play and struggle between them making the hidden basis of our thinking and consciousness—or, to use the physical terms, that there may be an aristocracy of cells, with vassals more or less obedient.⁵

Nietzsche has interesting reflections on will to power as involving pleasure and pain—pleasure resting on the increase of power, pain consisting in the feeling of weakness⁶—but I must merely refer to them.

¹ *Genealogy*, etc., ii., § 1.

² On consciousness as a tool, *cf.* *Will to Power*, §§ 643-644, 646.

³ *Joyful Science*, § 354; *cf.* *Will to Power*, §§ 569, 524.

⁴ *Ibid.*, § 711, "not 'increase of consciousness,' but heightening of power is the end," which may possibly be directed against Fouillée, who also put will at the basis of things, but "will for consciousness," according to A. Lalande (*Philosophical Review*, May, 1912, p. 204).

⁵ *Will to Power*, 490, 492.

⁶ *Ibid.*, § 693, *cf.* §§ 428, 657, 670. Pleasure rests on pain, being the sense of an obstacle overcome. If the pleasure is to be great, the pain must be long, the tension of the bow extreme (*ibid.*, § 658; *cf.* §§ 661, 694, 699—pain, while different from pleasure, is not just its opposite). Hence in will to pleasure is involved will to pain (*ibid.*, § 695). Nietzsche also emphasises the intellectual element in pleasure and pain in general (*ibid.*, §§ 490, 505, 669); he even goes so far as to say, "in itself there is no pain" (*ibid.*, § 699). Schopenhauer had asserted the relativity of pain, but to the will (not necessarily to the intellect). Nietzsche does not think that pleasure and pain cause anything, they being merely accompaniments [of reactive processes] (*ibid.*, § 478). In accordance with this general view of the nature and necessity of pain, is a remark to the effect that the simple unsatisfaction of our im-

Will to power also lies behind thought or philosophy, as already explained. It too is a kind of appropriation, mastery. Thinking is only a sublimated action of the same forces manifested in the amoeba. Man seeks to turn all that is into something like himself, to make it thinkable, visible, feelable—he subjects it to categories and turns it into his own substance, as the amoeba does foreign material into its own body.¹

There is only one higher expression of the will to power and that is in the saint (in the nobler meaning of the term), the hero-saint, who does not turn his back on the world, but impresses the image of his highest thought upon it and transforms it—who knows, thinks, only to love and in love to act, to create.²

So does Nietzsche interpret the whole gamut of things in in terms of power and will to it.

pulses (hunger, sex, or the impulse to move) contains nothing to lower our pitch—works rather to stimulate us (*ibid.*, §§ 697, 702). There are two kinds of pain, one that acts as a stimulus to the sense of power, another that arises after the expenditure of power; and to these correspond two kinds of pleasure, one such as we have in going to sleep in a state of exhaustion, the other being the pleasure of victory (*ibid.*, § 703).

¹ *Zarathustra*, II., ii., cf. xii.; *Will to Power*, §§ 501, 510-511. Nietzsche speaks of "thinking" [i.e., the equivalent of our thinking] in the pre-organic world as an enforcing of forms, as in the case of the crystal. In our thinking the essential thing is the putting of new material into old schemata (= Procrustes bed), equalising the new (*ibid.*, § 499).

² Cf. Nietzsche's own statement: "To become artist (creating), saint (loving) and philosopher (knowing) in one person—my practical aim" (*Werke*, xii., 213, § 448). The passage is perhaps reminiscent of his early aspiration, but this changed in form more than in substance. He does indeed say in *Ecce Homo* (Pref. § 2), that he is a disciple of Dionysus and would rather be a satyr than a saint, but he means by "saint" here one who turns his back on life. Even asceticism Nietzsche did not altogether discountenance, but the sort he favoured was in the interests of life, not against it. Those whom he regards as the supreme type of men practise this kind of asceticism and find their pleasure in it (*The Antichristian*, § 57). In speaking of the future "lords of the earth" (who are to replace God for men and win the unconditional confidence of the ruled), he emphasizes first "their new sanctity (Heiligkeit), their renunciation of happiness and comfort" (*Werke*, Poek. ed., vii., 486, § 36). Purity and renunciation (of some kind) are the essential elements in the concept of the saint (cf. the sympathetic portrayal of the saint as representing the highest instinct of purity in *Beyond Good and Evil*, § 271, also *Genealogy*, etc., i., § 6).

II.—WHAT DO WE MEAN BY THE QUESTION: IS OUR SPACE EUCLIDEAN?

BY C. D. BROAD.

EVER since the existence of Non-Euclidean geometry has been widely enough known to reach even philosophic circles philosophers have asked whether our space is Euclidean, and whether there is any means of finding out if it be not Euclidean. That ordinary philosophers should have disagreed in their answers to such questions as these is not surprising; they lacked the mathematical training needed for an intelligent discussion of the subject and many of them were sadly led astray by a popular article by Helmholtz. But it is more surprising that men like the late M. Poincaré and the living Mr. Bertrand Russell should come to quite opposite conclusions on these questions. Both are absolutely competent to appreciate all mathematical points involved; the former was a great mathematician and a respectable philosopher, the latter is an extremely competent mathematician and an eminent philosopher. We must suspect then that their different answers are due to some ambiguity in the question. In this paper I am going to try and clear up some of these ambiguities; and, when this has been done, we may find a probable answer to the above questions.

Obviously the first point to clear up is what is meant by the phrase 'our space'. Until we know precisely what we mean by 'our space' it is useless to ask any further questions about it. The phrase is a peculiar one; it seems to suggest that we have a space of our own as we have a latchkey or as Trinity College has a hall. And this suggests that there may be other spaces owned by other people, just as other people have latchkeys and other colleges have halls. Now in a certain sense it is true that each of us has a private space peculiar to himself and as unique as his latchkey. Such spaces may be called perceptual spaces. We must inquire first what is meant by a private perceptual space.

To answer this question we need to go a little further back and ask what is meant by *a* space. There is of course an ambiguity in this question. In one sense *a* space is any closed piece of extension. In this sense we should call the Great Court of Trinity *a* space. But this is not what is meant in the present question. What is meant is this. Mathematicians talk of Euclidean, and hyperbolic spaces, and now we are beginning to talk about private perceptual spaces; here we are using space as a general term of which there are different particular instances, just as we use nation as a general term and then distinguish between the English, the French, and the German nations. So the question is: What must all kinds of spaces have in common in order that the common name space may be appropriate to them? I think when we talk of a space we assume the following things. We assume a class of entities which we call points and we assume certain kinds of relations between them and other relations which only relate certain selections of them. Thus a straight line in any space is a certain selection of the points in that space which are related to each other in a certain way and are not related to other points of the space in this way. Similar remarks apply to planes and to other curves and surfaces in the space. The relations and the important kinds of subclasses of related points in the space are or should be named and defined in the definitions of the geometry in question. The axioms will tell you the relations that must be assumed between these primary relations and subclasses. Thus the axiom that two straight lines cannot inclose a space in Euclidean geometry tells you that in that geometry any two subclasses of related points which agree with the Euclidean definition of a straight line will either have one point or none in common. But at present it is important for us to notice that there is something further which does *not* explicitly appear in the definitions, axioms, and postulates of any system of geometry. This is the fact that we certainly draw a distinction between space and matter which is in space. Of course points are unextended, whilst all bits of matter are supposed to have some extension though it may often be an imperceptible one. Thus any bit of matter corresponds to an infinite number of points of the space in which it is supposed to be. But this is not the most important distinction. Matter is supposed to be capable of moving about, and, if we talk of a piece of matter as being in a certain kind of space we say that it moves about in this space. But we cannot say that points of space move about. What precisely does this dis-

tingtion come to? It comes to this. If we mean to distinguish space from matter we must suppose that pieces of matter are related in a certain peculiar way to points of space. The relation itself is not a simple one. It involves space and matter and time. We say that a piece of matter is at a certain place at a certain time. This means that if we imagine the matter divided up into material unextended points each of them will be at one definite point of space at a certain moment of time. When we say that the piece of matter moves we mean that at a second moment some of its material points are at different spatial points from the ones at which they were at the first moment. We must for completeness distinguish between movements of translation, movements of rotation, dilatations and deformations. It is not important for our present purpose to go into the question of how these are distinguished. Now suppose there be two pieces of matter in the space in question. On the view that there is such a thing as space, that it is distinct from matter, and that matter is in space, we must next carefully distinguish two different kinds of spatial relations which are called by the same name and are liable to be confused. The first kind are the relations between bits of matter; as when we say that Cambridge is sixty miles N.E. of London. The second is the relation between points of space as when we say that the place where Cambridge is is sixty miles N.E. of the place where London is. But this distinction is only a rough first approximation to the distinctions that we must finally make if we are to be in earnest with our view that matter is in space. You obviously cannot talk strictly of *the* distances between Cambridge and London because various parts of Cambridge are at different distances and in different positions relative to various parts of London. Thus the distinction that we have ultimately to recognise is that between the relation of a definite material point in the mass of matter which we call Cambridge to some other definite material point in the mass of matter which we call London and the mutual relation of the geometrical points at which these material points are situated. Now to a person who is in earnest with the notion of space there is an important difference between the two kinds of relations. The spatial relation between two material points is not a simple or ultimate thing. It is compounded of the relation between the two geometrical points at which the material points are situated and the relation which each of the material points has to the geometrical point at a given moment. The statement 'the material point A is twelve miles to the S.W. of

the material point B at the moment t' means 'the material point A is at the geometrical point a at t and the material point B is at the geometrical point β at t and the geometrical point a is eternally twelve miles S.W. of the geometrical point β .'

This shows us an important distinction between the spatial relations of material points and the similarly named relations between spatial points. The relations between material points may alter with time, those between spatial points are essentially timeless. You can say that A was twelve miles S.W. of B at t_1 and two miles N.E. of it at t_2 , but this does not imply that any change has taken place in the relations of the geometrical points a and β . It only means that A or B or both of them have ceased to be at the geometrical points a and β and have come to be at other points a^1 and β^1 which have and always have had the relation that a^1 is two miles N.E. of β^1 . It is then of the very essence of the notion of space as distinct from matter that points of space and their geometrical relations are timeless, and that the spatial relations of material points can alter in time owing to the fact that two material points can at different times be at different geometrical points without making any difference to the spatial relation of these geometrical points to each other. If this distinction be forgotten it is impossible to make any clear separation of matter and space. This is of great importance because it cuts out at once certain suggestions of extremely empiricist mathematicians like Clifford, that the space-constant of our space may vary with time and that this may explain certain physical phenomena. Any one who takes such a view as this may be invited to tell us how he distinguishes space from matter and whether he is really doing more than ascribing certain variable qualities to some pervasive medium like the ether.

A further question now arises. Granted that it is a part of what we mean by space as distinct from matter that it shall not vary with time is it also a part of its meaning that it shall be homogeneous? Is it compatible with the notion of space that its measure of curvature though independent of time may vary from place to place? I think not. It is incompatible with our notion of space that absolute position in space should be relevant in any physical law. If, for instance, bodies always changed their size and shape in certain definite ways as they were moved about we should feel it inappropriate to say that this was due merely to the change of their position in space. We should always assume physical causes for these physical changes. And I

may remark, we could never be proved to be wrong in doing this. When a finite body alters its position in absolute space this is never the *only* fact about it that alters. It *ipso facto* changes its relative positions to other bodies; hence any change in the body can always be referred to these changes of *relative* position, and this be given physical causes. A similar remark applies to absolute time. It is incompatible with the distinction between time and events in time that any causal law should contain absolute time; for this would mean that one antecedent in a causal law was not an event but a moment and so time would act on matter. But there can never arise the least necessity to employ causal laws which contain absolute time, for the following reason. The only ground that could make any one wish to do this would be if it were established that the universe had been in the same total state at two absolute moments t_1 and t_2 , and yet that its history between t_1 and t_2 differed from its history after t_2 . They would then be inclined to say: There is no difference in the antecedents of states that follow t_1 and states that follow t_2 on this hypothesis and yet these states differ. Hence they cannot be determined solely by antecedent *events*, but the absolute time at which a state happens must be relevant. But this is quite a mistake. It rests on supposing that, when the state of the universe at any *one* moment is given it ought to be determinate at any other moment; and this view itself rests on the false belief that the series of events is not continuous but that there are next moments. The fact is that the state of the universe at any moment may be a function of its states at several other moments. In that case the history of the world between t_1 and t_2 will be a function, not merely of its state at t_1 , but of this and some of its states before t_1 . The history of the world after t_2 will be a function of its state at t_2 and of some of its states before t_2 . The selection of states before t_1 needed to determine the history of the universe between t_1 and t_2 , need not be the same as the selection of states before t_2 needed to determine its history after t_2 . Hence the mere fact that the states at t_1 and t_2 are identical is no reason why the states between t_1 and t_2 should be identical with the corresponding ones after t_2 . Thus, if these corresponding states are not found to be identical, we still have no reason to suppose that they cannot be determined wholly by antecedent *states*, and therefore no reason to think that they involve any reference to absolute moments of time.

We thus reach the important conclusion that, if we mean to be in earnest with our distinction between space and matter

on the one hand and time and events on the other, we must lay down the following conditions for space and time. Space and time are not themselves in time, geometrical and temporal relations are eternal. The only thing that changes in motion is the relation of material points to geometrical points. Again space and time cannot be conceived as capable of causal action on matter. All laws about the changes of matter must simply contain the states of matter at one or more times, *relative* positions, and *differences* of time. They must not contain absolute positions or absolute moments. Space and time must therefore be conceived as homogeneous; they must not have different qualities at certain points or moments from what they have at other points or moments. And we have seen that experience can never force us to any other conclusion. Of course nothing that I have said lends support to the view of certain French philosophers who hold that we can decide at once in favour of Euclidean geometry because it allows of similar figures whilst hyperbolic and elliptic geometry do not. There is nothing incompatible with what I have said about the necessary qualities of space and time in the non-existence of similar figures. That there should be a certain constant relation between lengths of side and magnitudes of angles involves no causal action of space and time on matter, any more than in Euclidean geometry the fact that you could not make a triangle, whose angles were less than two right angles means that Euclidean space acts causally on matter. This relation is eternal and purely geometrical.

The reader will naturally have been wondering during this discussion what right I have to lay down in this confident way the properties that must and those that cannot belong to space and time. He will ask: Are they axioms and self-evident; or are they merely a question of definition? If they be merely a question of definition why should our definition be any better than one which Clifford might have made up for space which should allow space to have a measure of curvature variable with time? The answer to this question will help us a good deal towards a solution of our main problem.

The point to notice is that the distinction between space and matter is not something that we find, but something that we make—to use a somewhat unguarded expression which I will modify later. When I say that we do not find the distinction I mean two things. (1) We clearly do not directly perceive space and directly perceive matter and then compare them and find what are the characteristic

qualities of each. It is admitted on all hands that empty space is not perceptible at all, and it must further be admitted that if by matter you mean what physicists mean by matter *it* too is not directly perceptible. But (2) this is not all. Space and matter are not two definite things which are given together in experience and then separated out by analysis. When we hear a musical note we hear a complex unity; subsequent reflexion and comparison enable us to assert that in all notes will be found the two characteristics of pitch and loudness. I should then say that we analysed the two qualities of pitch and loudness out of a complex experienced object and can go on safely to describe the peculiar nature of these two qualities. But this is not the kind of procedure by which we reach the distinction between space and matter and become acquainted with the characteristic peculiarities of each. When we state that the proper interpretation of any relative motion is that of two pieces of matter one at least has come to occupy a new position in a changeless space it cannot be said that we are *merely* analysing a complex given in experience and finding what was in it all along. The whole scaffolding of a space of points in eternal geometrical relations to each other seems quite obviously not to be an element given to us confusedly in an experienced complex and clearly recognised by subsequent reflexion, but to be something added by us to the experienced facts. Of course it is not a case of *mere* addition. We do analyse what we experience into bodies and their relative positions and geometrical relations; but then we treat these bodies as complexes of material points correlated from time to time with various geometrical points whose mutual relations are eternal. The first part of the process is genuine analysis quite comparable to the discovery that a sound has both pitch and loudness; but the second part, the part that introduces space, is quite clearly not just a further analysis of the same kind. It is not a finding of what when found we recognise to have been there all the time; it is an addition made by us involving a special interpretation of the experienced facts.

If now you ask: Why should I accept precisely your definition between space and matter; is it an axiom or a definition or what? we are prepared to answer: Certainly it is not an axiom, but a matter of definition. But it is not arbitrary. The distinction of space and matter, the view that matter moves about in space whilst space remains eternally unchangeable, and the view that time and space do not act on matter:—these are the characteristics of a

certain way of describing the experienced facts. It is not the only possible way, but it is the way which common-sense and science have taken. So long as you talk about space at all you presuppose that this method of describing the facts has been adopted, and so long as you do this you must ascribe to space the qualities that I mentioned. To put it in another way. To talk of space and its qualities presupposes that space is something distinct from matter; hence it is useless to try and give space qualities which made it indistinguishable from matter. And a careful consideration of what we really do mean by space will show that we mean something that has the qualities and the relations to matter which I have described.

I must now try and state much more accurately what I meant when I said that space was something that *we* added to our experience and not something found by us. This sounds very subjective and Kantian, and I must make a number of distinctions to avoid misunderstanding. 1.¹ I do *not* think that the shapes, sizes, motions, and spatial relations of perceived objects can in any sense be supplied by our minds; they are found and not made by us just as are colours, sounds, etc. 2. I do mean that, when we interpret relative motion in terms of absolute motion in space, the space and its qualities are neither (a) directly experienced like colours; nor (b) recognised to be present in what we experience by subsequent reflexion, as pitch and loudness are recognised to have been present in any sound; nor (c) reached by inference from what we do experience, as we reach the belief that there are light-waves from our experiences of colours. I will elaborate this last point a little further. It follows from the definition of absolute time and space that our reasons for believing in them can never be an inference from what we perceive such as we use in physics to support our beliefs in imperceptible objects like atoms and ether-waves. All these inferences in physics depend on the view that the inferred entities cause something in what we experience. Now it is part of the definition of space and time that they cause nothing; hence our belief in them cannot be supported by inference from what we directly experience. 3. It seems then that the interpretation of perceived spatial relations and perceived motions in terms of space must be something that we ourselves add to the facts. By this I do not mean that there may not be such a thing as a real geometrical space of

¹ I do not wish to deny that the *sensuous* peculiarity which distinguishes a felt corner from a seen corner may be mind-dependent. But it is no more so than any other sense-datum.

points in eternal relations, but that we have no reason for believing that there is such a space. It is one possible interpretation of observable facts, but it is rather a bizarre interpretation the elements of which are supplied by ourselves. How much of the interpretation is supplied by ourselves and what precisely this means are questions which I defer for the moment. At present we know enough about what is meant by space to be able to return with profit to the question what is meant by *our* space. The further working out of the answer to this problem will do much to clear up this deferred question.

We said that we could talk of private spaces and that these were found in perception. Psychologists talk of perceptual space and conceptual space, and contrast the two. But the distinction is not quite a happy one. To talk of a perceptual space suggests that it is a kind of space that can be perceived. But no kind of space can be perceived by the senses. What is true is that several of our senses, *e.g.*, those of touch and sight, make us aware of extended wholes in which we can distinguish parts in spatial relations to each other and in relative motion. For example, in sight we become aware of a total field of vision and can see in it visual objects in spatial relations to each other. Again by touch we become aware of tactual objects with various shapes and spatial relations and we may feel these moving about. But the object of sight and the object of touch are not themselves spaces. What would really be meant by a private visual space would be this. Suppose a man were to deal with all his visual experiences on the plan of constructing visual bodies and the space in which they move, the space having those characteristics which we have laid down for all spaces; then the space so constructed would be a private visual space. We must assume that the man takes no heed of any information that he gains from any other sense; the space is to be constructed so as to deal simply with the data of all his sight experiences on the general plan of distinguishing space from things in space. Similarly a private tactual space would be reached by a man who should deal with all his data given him by touch without reference to any other sense, according to the general plan of distinguishing space from matter which moves about in it. Thus to each private sense-space will correspond a special kind of thing: to sight-space will correspond visible things, to touch-space felt things.

We thus see that the distinction between perceptual and conceptual space is not a happy one. All spaces are conceptual in the sense that they are constructed in order to

deal with certain sets of experienced objects according to a certain definite plan; all spaces are perceptual in the sense that they are constructed to deal with the extended data of certain senses. But there is an important practical distinction between the private space of any sense in any person and what is commonly called conceptual space. The latter is constructed to deal consistently, according to the fundamental plan of distinguishing space and things in it, with the data of all senses in all people. But the private spaces of the special senses in particular people never have been constructed and perhaps could not be constructed at all. To construct such a space we should have to be sure, *e.g.*, that all the visible objects that we perceive with their visible movements can consistently be regarded as things moving about in a special space with the qualities that we have laid down for all spaces. Whether this could be done at all successfully is by no means certain; there is no *a priori* necessity why the data of each of our senses in abstraction from those of the others should be capable of being dealt with according to this plan; and it is quite certain that it has never been done by any one. We must therefore regard private perceptual spaces as at best constructions which *may* (but *may not*) be possible, and we can say with some confidence that, *if* they be possible, they are most unlikely to be Euclidean.

We are now very near the answer to our question: What do we mean by *our* space for the purpose in hand? We do not mean the private perceptual spaces of any one, for we do not even know whether such spaces be possible. We must mean a space so constructed as to enable us to deal with the data of all senses of all men. This is a rough general way of putting our answer; we must now try to refine it. Let us call this space physical space. The first thing to notice is that, though physical space is defined as a space constructed to enable us *to deal with* the data of all the senses of all men, yet it is not true that the data of any sense of any person are *in* physical space. If the data of any sense of any person be in space at all they are in the private space of that person appropriate to that sense. If there be no such things as private perceptual spaces then no one's sense-data are in any space at all, though of course they have spatial qualities, *i.e.* they are extended, move, and have spatial relations to each other. This apparently startling result arises from the close correlation of space and bodies; every special kind of space involves a special kind of bodies, for space and bodies are the two correlative elements involved in a certain definite way of dealing with an extended whole whose parts

have relative motions. The bodies that correspond to physical space are physical bodies; these are not identical with what is perceived by any of our senses; what I see and what you see at the same moment when we say that we are looking at the same body will have slightly different shapes; the body that is supposed to be moving in physical space is not identical with what I see or with what you see, though it is correlated with the sense-data of both of us. The distinction between physical bodies moving in physical space and perceptible bodies moving in some private perceptual space if in a space at all is best seen in the case of dreams. In dreams we see things in various spatial arrangements moving about in various ways; but we never suppose that they are in the same space as chairs and atoms; if they move in a space at all it is in a dream-space appropriate to them. The reason why it is obvious that dream-objects are not in physical space and less obvious that sensible objects are not in physical space is that physical space has been constructed to deal with all or nearly all the objects perceived in waking life but not to deal with dream objects. It follows that there is a close correlation between physical objects and the objects of our senses in waking life, but that there is practically none between dream-objects and physical objects. We therefore have no temptation to think that the objects of dream perception are in physical space. We do not believe this even of the objects of certain sense-perceptions; when we feel a huge hole in a tooth with the tip of our tongue we do not believe that a huge hole exists in any object in physical space. This is because physical space and physical bodies are only constructed to deal with certain important data of sight and touch and not with all perceptual data even of waking life. It is by no means certain that, if we tried to construct a space that should consistently deal with both the data of waking life and those of dreams or even with *all* the data of waking life, we could do it. Our total mass of perceptual data may very well not be susceptible of treatment according to the general plan which distinguishes matter and space.

I think there can now be little doubt as to what we mean by *our* space when we ask whether it is Euclidean. We mean the space of physics which has been constructed to deal consistently with most of the data of waking sight and touch in most people on the general plan of distinguishing space and matter and attributing to space the qualities that I have laid down. Now that we know what is meant by *our* space we can go on to discuss what is meant by asking

whether it is Euclidean. Three points arise for discussion. (1) Is this a sensible question? (2) If it has a meaning, is it capable of a single definite answer? and (3) If it be capable of a single definite answer in theory is there any practical way of finding the answer?

To answer these questions we must go more thoroughly than we have yet done into what is meant by saying that we construct space. This sounds very subjective. I have already pointed out that I do not mean by the phrase anything like the Kantian notion that the mind makes extension or spatial relations. It finds these just as it finds colours, sounds, etc. But I have only further described what I mean by construction in negative terms. I have argued that to say that we construct space involves at least the two negative propositions, (1) that we do not discover it by analysis of what we find given to the senses, and (2) that we do not infer it as something causally connected with what we perceive. I will now add a more positive determination of this much-abused word 'construction'. The best way to approach this subject is by considering the use of parameters in elementary mathematics. Thus in dealing with ellipses it is customary to introduce a certain angle such that $x = a \cos \phi$ and $y = b \sin \phi$. A closer analogy to construction in the sense in which I use the word is found in the introduction of the parameter θ in dealing with cycloids. We find it simpler to deal with cycloids on the assumption that they have all been generated by circles rolling on straight lines. The parameter θ represents the angle turned through by the circle from the beginning of its motion. Now it is quite clear (1) that not all cycloids really have been made by actual circles rolling on actual straight lines. The arches of Westminster Bridge are arcs of cycloids but they certainly were not made in this way. (2) It is also clear that it is quite irrelevant for all mathematical purposes whether any particular cycloid was actually produced in this way; we can always introduce the parameter θ and deal with cycloids by means of it no matter what is the physical history of any cycloid. Now what I want to suggest is that physical space and physical matter are, so far as we know, just parameters which are introduced when we deal with sensible experience according to a certain plan. Why we insist on dealing with sensible experience according to this plan is not obvious. If anything at all be left of Kant's intuitional theory of space I think it may reduce to this that we have an innate tendency to deal with sensible experience according to the plan of separating space and matter, ascribing to space the general qualities

that I have laid down, and conceiving matter as moving about in it. But I do not wish to insist on this suggestion. The more important point for us to notice is that actual experience has proved that the steady pursuit of this general plan of dealing with the sensible world has had very great success; we have by its means made this world and its changes more and more intelligible and predictable. But this does not prove that it is the only possible plan, or that there may not be a yet more successful alternative. Many alternative plans are suggested, *e.g.* by Dr. Whitehead in his paper on *Mathematical Concepts of a Material World*; and the modern theory of Relativity in Electrodynamics suggests that our old plan is not the best for dealing with all the facts.¹

Let us now return to our analogy between space and the parameter θ used in dealing with the cycloid. What is meant by asking: Is physical space real and is it Euclidean? If a man asked whether the parameter θ really exists he would mean: Did this particular physical cycloid originate through the rolling along a physical straight line of a physical circle provided with some arrangement for making a mark? In another sense the parameter θ is always real in the case of any real cycloid; for it is a definite function of magnitudes connected with this cycloid which can actually be measured. In no sense is the parameter θ subjective; it is not made by us arbitrarily; this function of the Cartesian co-ordinates of a cycloid exists whether we notice it or not, and the only subjective part of the whole business is our determination for purposes of our own to denote this function by a definite letter and to deal with it explicitly. Let us apply this analogy to space. What is meant by asking whether space is real? As with the question about the parameter θ the question is ambiguous. It may mean (1) Are the points of physical space of the same logical type as particular sense-data? Sense-data are particulars, not classes or relations. The question thus means: Are the points of physical space particulars like sense-data or are they classes or classes of classes or relations? The second meaning of the question is: Can all observable movements be stated as functions of physical bodies with the qualities that have been ascribed to them and of space with the qualities that have been ascribed to it in the particular system of physics and geometry under discussion? If so the space and the

¹ Cf. Mr. A. Robb's very interesting and important work, *A Theory of Time and Space*.

physical bodies of this system of physics and geometry are real in the sense that they are definite functions of observable facts, functions which of course are just as real whether we explicitly notice them and give them names or not.

Now can these questions be answered? The second can be answered by simple inspection. You have merely to see whether there be any facts of sensible experience that will not fit into the system of physics and geometry under discussion. If they all do so you will be able to say that the space and the bodies of this system are real, as far as we have been able to tell, in the second sense. I can hardly give a better example of what I mean than by asking whether the facts, of electrodynamics fit in with the Newtonian physics and the Euclidean geometry. If they do not then either Euclidean space or Newtonian bodies are not real in the present sense. Now, in so far as we have in electrodynamics to assume the Lorentz-Fitzgerald contraction and cannot explain it physically, we shall have proved that the Newtonian physics and the Euclidean geometry are not capable consistently of dealing with all observable facts, and so that either Euclidean space or Newtonian bodies are not real. For if the Lorentz-Fitzgerald contraction cannot be explained physically it will involve an action of space or matter, and this is contrary to the general conditions which all space must obey. I do not say that the facts of electrodynamics do force us to conclude that either Euclidean space or Newtonian bodies are unreal in the present sense; but I take this as an illustration of the sense of reality under discussion, and remark in passing that these facts have actually led certain mathematicians and philosophers, *e.g.* Minkowski and Mr. Robb of Cambridge, to elaborate a new system of geometry and a new system of physics which shall consistently fit all the facts.

Let us now return to the first meaning of reality. The first thing to notice is that the question whether space and bodies be real merely in the sense of being of the same logical type as objects of perception is of very little importance compared with the question whether they be real in the sense of being consistent functions of all observable facts. And I think the question is and will always remain an unanswerable one. The only way in which we can become sure of the existence of any particular, *i.e.* of anything of the same logical type as a sense-datum is either (1) by actually perceiving it or (2) by inferring its existence as causally connected with some of our sense-data. We have seen that space cannot be known in either of these ways. It

might perhaps be said that at any rate physical bodies can be inferred as the causes of certain sense-data, *e.g.* light waves are inferred as the causes of our sensations of colour. I am now inclined to think that this is possibly a mistake and that Mr. Russell may perhaps be right in regarding physical bodies as constructions just as space is a construction. The only difference will be that space is a construction involving objects of a higher logical type; thus if physical bodies be classes of sense-data, points of space will be classes of classes of sense-data. So the only answer to the question whether points of space be real in the same sense as perceived objects is the following: Geometrical points and physical bodies as constructed by us are certain functions of our sense-data. Geometrical relations of spatial points are relations between these functions so determined as to be consistent with the relations that we actually can observe between sense-data themselves. Whether there be particular entities as distinct from these functions which have to each other the same relation as these functions we cannot tell. If there be such entities then geometrical points exist in the same sense as directly experienced objects; if not they only exist in the sense in which a real function of certain existent magnitudes can be said to exist. And the latter mode of existence is enough for all scientific purposes, and enough to make the existence of space independent of any one's mind.

We are now in a position to answer the question which forms the title of this paper: What is meant by asking whether our space is Euclidean? All that it can really mean is this: Subject to the conditions that space is to be changeless and homogeneous and not to act on matter, and that matter is to move about in space, can we construct a system of physics which assumes Euclidean geometry for space and enables us to deal consistently and adequately with all the data and all the changes in the data of the various senses of all sane waking men? This way of putting the question asks a little more than we really ask of science; we actually allow science to neglect a good many sense-data, *e.g.*, those obtained through using the tip of the tongue, etc., and we also allow it to prefer some sense-data to others of the same sense; *e.g.*, we are contented if its amount is consistent with the sense-data reached by means of an instrument of precision like a microscope, and allow it to neglect, in comparison with these, sense-data obtained by the naked eye. So the final form of the question will be this: Subject to the conditions that space is to be changeless and homogeneous

and not to act on matter, and that matter is to move about in space, can we construct a system of physics which assumes Euclidean geometry for space, and enables us to deal consistently and adequately with all the data that scientists agree to be most worthy to be taken into account? We cannot now go further into the long and complicated story of the justification of scientists in preferring some sense-data to others; we must take it for granted here that they are right.

Now of course the only way to answer such a question as this is actually to try and construct such a system of physics. If you can do it, well and good; space is Euclidean. If not then space may not be Euclidean. But there are three very important points to notice here. 1. It is notoriously very difficult to prove a negative. Anybody's or everybody's failure to construct a satisfactory system of physics assuming non-Euclidean geometry could not prove that such a system was impossible and that our space was not Euclidean. At the most it would strongly suggest it. 2. All the alleged particular crucial experiments like measurements of stellar triangles, of parallax, etc., are quite wide of the mark. They forget that *both* physics and geometry are constructed out of a *common* matrix, *viz.*, people's sense-data and the relations and changes of these, and therefore our physics and our geometry are essentially correlatives. Hence such experiments at best only answer the question: Can we keep our physics unchanged and retain our Euclidean geometry. This may be an interesting question, but it is not the question whether our space is Euclidean. And it is essentially an unfair kind of question. You might just as well ask: Can we keep our Euclidean geometry unchanged and retain our old physics? The proper question is: Can we make up *any* system of physics which will account consistently for all the facts and allow us to retain Euclidean geometry? if so our space is Euclidean. 3. The third very important point to notice is that, if it be decided that our space is Euclidean, this will in no way prove that it is not also non-Euclidean. If we can also make up a system of physics which shall deal consistently with all the sense-data recognised by science and assume hyperbolic geometry, then our space will also be hyperbolic. The moment that we see that physics and geometry are essentially correlative factors in a certain way of treating a common experience we see that there need be no essential incompatibility between the three geometries.

Before closing this paper I would like to say a word about an argument that is used by Prof. Aliotta.¹ He seems to

¹ *The Idealistic Reaction against Science.*

hold that there is no incompatibility between Euclid and the other two geometries because hyperbolic and elliptic geometry are mere fragments of Euclidean geometry. All figures dealt with by non-Euclidean geometry exist in Euclidean geometry, but some Euclidean figures do not exist in non-Euclidean geometry, *e.g.* Euclidean straight lines. As stated this is undoubtedly false. The geometry of the horosphere in hyperbolic geometry is Euclidean, just as much as the geometry of the pseudosphere in Euclidean geometry is hyperbolic. Again in hyperbolic geometry there are equidistance curves to correspond to Euclidean parallels, though of course equidistance curves are not hyperbolic straight lines. But although Prof. Aliotta's explicit statement is certainly mistaken it misses the following interesting point. In Euclidean geometry points, straight lines, and planes are simply defined by postulates, *i.e.* by propositions asserting their relations to each other. It follows that a point, a straight line, and a plane in one space cannot mean precisely the same things as points, straight lines, and planes in any other space. This at least leads to the suggestion that, *e.g.* hyperbolic points may be certain logical functions of Euclidean points and Euclidean points certain logical functions of hyperbolic points. If this be so then, even keeping our physics constant we can treat the corresponding space as either hyperbolic, elliptic, or Euclidean; and the three geometries will only be three different ways of meeting the same geometrical relation. But whether this last suggestion be a fact is a question into which we cannot now enter.

III.—LOTZE'S RELATION TO IDEALISM.

BY E. E. THOMAS.

SECTION 3.

So far we have seen Lotze maintaining that what renders the world a whole is an order of validity, which is independent of all that is or that takes place. What we seek to show in this part of our paper is, that from this position Lotze takes two ways, the one leading to Idealism, the other away from Idealism. We will first trace his Idealism. He recognises that this unity of order is not the only unity in the world; there is another unity, namely, that of existence, which also extends over the whole of reality. Lotze brings out the distinction between these two forms of unity by comparing the logical principle of ground and consequent with the real principle of cause and effect. There are two reasons which bring it about that (a^1) acts with (b^1) to produce the consequence (f); the one is that (a^1) and (b^1) are in their natures eternally adapted to one another; the other is that the course of events in the world has actually brought them together. The circumstances which bring things together are summed up in what we call the unity of cause and effect; whereas the unity through the medium of which things are adapted to one another is summed up in what we call the logical unity of ground and consequent. This unity of cause and effect or of existence, rests, according to Lotze, in the life of a single being co-extensive with the whole of reality; for when things interact with one another, or cause changes in one another's being the states of one thing A must be regarded as also the states of another thing B, with which A interacts, and *vice versa*. This, however, is only possible if A and B are parts of a larger whole M, which through its own activity produces or finds within itself a variety of states corresponding to, or rather constituted by, the variety of those objects which find their existence within it. Further, since all things act reciprocally with one another it is clear

that everything must find its existence as a part or state of a single being *M*, which includes within itself all that exists.

Now it is the answer which Lotze gives to the question as to how these two unities stand related to one another, that determines his attitude towards Idealism. To make the unity of order prior to that of existence, is to return to Idealism; to make the unity of existence prior to that of order, is to move away from Idealism.

Lotze tries to reduce the order of validity to a unity of principle; but he fails to do so. He holds the view that logical relations of reason and consequent are summed up in the form of general laws. These laws, it must be remembered, are not those which, as constitutive of individuality are principles of reality. Further, he holds that these laws are derived from one another on a basis of syllogistic reasoning, which proceeds analytically. He tells us that through such reasoning we arrive at last at a body of laws which cannot be brought to further unity, for they will involve a synthesis which mere logic cannot give to them. Let us take an example of this derivation of laws from one another. We will take the general law, "All organisms must die"; then the individual case, "Men are organisms"; then the law derivable from this, "Men must die". Now if all that is individual comes under such laws, and if these laws are derived from one another in the way described, we shall at last arrive at a few laws or one law which leaves no part of existence outside of itself. If we had such a highest law, what would be the principle of unity involved in it? The Transcendental Idealists would have maintained that its unity is that of the presuppositions of experiencing anything at all; but as soon as we see that laws involve a unity of concrete nature the invalidity of such a position is at once brought to light, for concrete nature will not resolve itself into the content of presuppositions of any kind whatsoever. Lotze maintains that it is a unity based upon "an æsthetic necessity and justice". He says: "While undoubtedly a conception of the individual admits of being derived analytically from the general, the most general laws are given synthetic relations of reason and consequent, which we have simply to recognise without in turn making their connexion dependent on the fulfilment of any conditions whatever. No doubt, in the plan of the world as a whole these given relations are not isolated, unconnected, data. Any one who was able to express this highest idea would

find them bound together, not indeed necessarily by a logical connexion; but by an æsthetic necessity and justice."¹ He tells us, however, in the same section, that this æsthetically necessary unity is hidden for ever from us; that the reason why to $a^1 + b^1$ a consequence (f) is attached, and to $a + b$ no consequence is attached, can never be known to us. The only unity we can know is that as a matter of fact these consequents are attached to these antecedents. Thus Lotze refuses to undertake the task of showing that the unity of validity rests in anything deeper than a systematic order holding good of the natures of things.

We must notice that had Lotze undertaken this task he would have been forced to find the basis of the order of validity in personal life. 'Æsthetic necessity and justice' presuppose personal life in that to which they belong. Beauty, which is what we mean by æsthetic unity, lives in appreciation, and requires for its existence judgments of feeling. Justice lives only in the acts of a personal being. If he had found that the unity of validity is given in and through the medium of personal life, then he would have had to show how the interplay of personalities gives rise to the unity which we find in the world. This would have been to take up an Anti-Idealistic position, which he refused to do.

Now the unity of adaptation is something without which the unity of existence, and change in this unity, are impossible. It is therefore prior to existence and change. In order to influence the changes taking place in reality the unity of adaptation may be thought of as existing external to that whose changes it determines, and as influencing it from the outside; or it may be thought of as living within the order of change, and determining it from within. Lotze rejects the first of these views. The argument by which he does so arises out of his criticism of Leibnitz's pre-established harmony. He tells us that if all things are harmonised in God's understanding before these things come to existence or reality in our world, then God really gains nothing by calling the world from idea into existence. The whole history of the world down to its minutest detail would be predetermined, and nothing new in the sense of being unknown, unthought of, or unexperienced, could come into

¹ *Metaphysic*, sec. 59, English translation.

existence. But (and here Lotze supposes that all things are a unity finding their existence in the life of a single being) reality has no value if it does not bring forward new experiences. If nothing new ever came into our consciousness then our life would have no value for us ; and if something absolutely new and unthought of did not come into the life of the world as a whole, then the world would not enjoy and live in the consciousness which it has of itself ; this would mean that the world would not really exist. Thus there can be no external order of validity standing external to that which it influences. Since this is the case, it would seem that this order must live within that whose changes it renders possible ; and this is what Lotze maintains. He holds that the eternal validity of a law connecting together eternal truths, that is, the eternal natures of things, lives in the law as being in process of fulfilment in reality ; that there is no independent validity of laws constituting a unity which has existence previous to, or independent of, the unity involved in the active, living, reciprocal action which takes place between things.¹

This at once raises the question as to how the order of validity can live within, and have a determining influence upon, the order of existence. It seems as if there is no way in which an order of validity can live within an order of existence unless both orders are identified as one and the same, which would of course destroy the distinction. If the timeless unity of adaptation between things lives in those things only as they find unity in reciprocal action, then it would seem that such unity of adaptation would only be valid when things actually interact with one another ; we should only be justified in saying that (*a*¹) and (*b*¹) are *now* adapted to one another in this particular way which produces a consequence (*f*), because, as a matter of fact, they act with one another in this way. It could not be maintained that these things are *eternally* adapted to one another, and must always act with one another in this way when they come together. Such identification of the unity of validity with that of existence would lead to the destruction of the former, and we should be left with scepticism.

Now if the unity of adaptation possessed the same kind of being as the unity of existence, the objection we have raised would be unanswerable. But it has, according to Lotze, a

¹ See *Metaphysics*, sec. 62.

different kind of being, for it rests in the natures of things, and these are different from the existence of things. The nature of a thing undoubtedly lives in the existence of that thing; if it did not do so the thing would not exist, for nothing can exist without possessing a definite nature. But at the same time this nature is distinct from existence, for it enables a thing to enter into relations of content which are not identical with those of existence. Iron and sulphur may exist in a heated condition in different parts of the world: they may never be brought together so as to form a unity of existence; but their natures are nevertheless related to one another permanently, and in this relation lies the possibility of their existing together to form a distinctive kind of whole. Thus while the unity of adaptation lives in the unity of existence, still its being is not exhausted there. An example from the case of personality will perhaps make this a little clearer. A person's nature may call for the company of persons of a certain kind; only by living with such may he be able to live the fullest and most intense life of which he is capable. If circumstances prevent him from meeting these persons then his life may become shallow and narrow. At the same time, however, it would be recognised that in him there lie greater possibilities than those which have become realised in his life as thus narrowed by circumstances. Such possibilities are the adaptations of his nature to other natures; they never live except in actuality; yet even when they do not find existence, they possess a reality or being of their own in that they hold good or are valid, and would come to actuality if circumstances could be controlled so as to bring such adapted natures together.

Now the being of validity becomes actual in existence; yet at the same time, its independence of existence gives to it a reality different from that of existence. This at once raises the question as to the form under which validity finds its reality. Lotze tells us that it finds reality in the form of truth. We must, however, distinguish between empirical truth and eternal truth; it is empirically true that the paper on the wall of my room is green; it is eternally true that fire will melt wax. The order of validity finds reality in eternal truth, not in empirical truth. Again, we must draw a distinction between truth and knowledge; the recognition of truth is given in knowledge through the medium of judgment, but truth is not dependent upon knowledge; if no one existed to maintain that fire melts wax it would nevertheless be true that fire does melt wax.

Lotze maintains that truth is a form of reality, existence another form, and change or becoming still another form; that each constitutes a side of reality which is not derivable from, or reducible to, the others; but that all form a peculiar whole. The absence from a thing's being of any of the above forms of reality would mean the destruction of that thing. A thing cannot be real unless it exists, and unless it changes under changing circumstances in ways peculiar to itself and which can be expressed as a permanent law; further it must possess a permanent nature which stands related in a permanent way to other natures.

The theory here put forward by Lotze is Idealism over again. The great problem of Idealism was as to how a body of presuppositions, which are eternally true, and therefore out of the reach of change, can enter into and determine the existence and the changes of things belonging to the temporal world of sense. The development of Idealism failed to solve this problem; Hegel sunk everything in the Absolute and by so doing made everything eternal and timeless, thereby destroying the distinction between the temporal and the eternal. With Lotze the order of validity consists of the detailed presuppositions of the content of experience; this constitutes an advance upon Idealism; for the presuppositions of experience as viewed by Idealists were presuppositions of mere experience, and consequently empty of real meaning and content. The problem of Lotze's philosophy is the same as that of Idealism; it is the problem as to how the eternal and timeless character of a body of laws can constitute themselves the presuppositions of all existence and of all change, and thereby enter into and determine that which belongs to time. To maintain that validity, existence, and change are ultimate forms of reality does not solve the problem; it only takes us back to the point from which Idealism started, with this difference; it involves the supposition that the problem is insoluble, while at the same time giving us no valid reason for regarding it in this way.

But there are other elements in the philosophy of Lotze which lead to a solution very different from the one put forward. There is in Lotze a very large tendency to regard personality, freedom, value, as the media through which the unity of the world is effected. It is to this tendency, which is Anti-Idealistic, that we must now turn our attention. There are two stages marking the development of this ten-

dency. The first is the view tentatively held by Lotze, that the unity of existence is effected through an all-inclusive personality which is gained through the interplay of lesser personalities; the second is the theory to which Lotze's philosophy is driving him, namely, that the unity of validity centres in personality. These two positions lead inevitably to the conclusion that the bringing together of existence and validity in the unity of the world is brought about through the interplay of souls or minds.

The first thing we have now to show is, how the unity of existence is effected through personality. Lotze maintains that the unity of existence consists in the fact that all things are parts or states of a single being, which he calls *M*; that all activity in things really consists of the single activity of *M*, which runs through all things and gives to them the appearance of acting upon one another from independent standpoints. Certain difficulties present themselves at this point. If, in every reciprocal action the whole *M* acts, then it would seem as though we ought to be able to trace, or at least to set before ourselves the ideal of tracing, not merely the actions of *A*, *B*, and *C*, which enter into this or that particular reciprocal action, but also the actions of *D*, *E*, and *F*, etc., as entering into it, until all things finding an existence in *M* are exhausted. It is quite true that in cases of physical action, such as the striking of one billiard ball against another, we consider all material existence as contributing to the effects which these have upon one another. But physical action is not the only kind of reciprocal action, and in many other kinds the whole of the activity is strictly limited to the very few objects immediately taking part in it. True, the objects taking part in this particular reciprocal action are connected with the outside world in a multitude of different ways; but in reference to the particular action in which they now take part they are isolated from the rest of the world. For instance, iron and sulphur may interact with one another in the crucible on my table, and the rest of the world will not be chemically affected in the least. Why not, then, maintain that these things, in so far as they are connected together through this particular activity, form a single whole cut off altogether from a living and active connexion with the rest of the world in respect of the kind of activity which is now taking place throughout its parts?

Lotze's answer to the question just raised is, that the change which *M* initiates within itself only requires that

these few objects shall act upon one another, and demands that the rest of the world shall remain unaffected for the time being. He bases this conclusion on a deeper view, namely, that the world is the expression of a single meaning; that in order to maintain unity of meaning as against change which might destroy such unity, it is not necessary that a corresponding change shall run through every portion of the world when a change takes place in this or that particular portion. Now meaning cannot be understood apart from consciousness; a thing has meaning in so far as it adapts itself, or can be adapted, to purposive activity on the part of a consciousness which acts in relation to it. The meaning of the world, however, must rest within the world and not in its relation to any consciousness which stands outside of it. Hence the world must possess purposive consciousness, and therefore personal life. This is the most cogent argument that can be put forward for the personality of the world. But while Lotze holds that the world has a meaning he does not base upon this the further conclusion involved in it, namely, that the world possesses personality. This conclusion he seeks to establish on the basis of other considerations.

The next point we have to establish is that the personality of the world as a whole involves the existence of lesser personalities; that it is the interplay of these lesser personalities which conserves that of the whole. In order to do this we shall show Lotze as maintaining that all activity is moral activity. We distinguish between physical action, the actions of persons, and the actions of the Divine Being, holding that physical action is entirely different from that of persons, and that the actions of the Divine Being are of such a nature that we cannot understand them. When Lotze maintains that things interact with one another on the basis of an eternal nature which is valid of them, he subscribes to this view; for such activity does not involve a moment which can be described as moral; even when he regards things as creative individualities this position is not altered. But when he comes to consider the springs of human activity and to connect them with the fundamental unity of the world, he makes all activity whatsoever moral activity. He makes a distinction between souls and spirits, holding that human beings are spirits, and all that is sub-human are merely souls. These sub-human souls he excludes from the moral union constituting the spiritual world. The activity of spirits, he tells us, is directed towards the realisation of that which is

considered as having worth or value in and for itself. The only thing that has such worth or value is pleasure. We must notice, however, that if activity is directed to the obtaining of feelings of pleasure and the avoidance of feelings of pain, then the activity of the individual, while being directed upon things outside of itself from which it can derive pleasure, centres in itself and returns to itself. And further, one soul cannot experience directly the feelings of another; hence activity directed to the production of feelings cannot unite souls to one another; it must rather tend to keep them apart.

Lotze seeks to modify the extreme individualism to which such a view as this leads by maintaining that feelings of pleasure and pain are not purely individual; that, on the contrary, like our individual judgments of truth and falsity, they have a universal side and are a means for discovering an objective order of worth or value in things. This gives us the ideal of a duty which is the same for all and which is binding upon all. He can only establish this position by maintaining that feelings of pleasure and pain have a qualitative content derived from the nature of the object which gives pleasure or pain. The activity of the individual is therefore directed to the obtaining of a particular pleasure from a particular object, and not to the experience of mere pleasure. But if objects existed altogether outside of consciousness; if they were not also part of the content, and constitutive of the life of the subject who feels pleasure in them, it would be difficult to understand how they could give a qualitative content to feelings. Lotze, however, tells us that the soul, through its activity, seeks to enlarge its own being by bringing into its life a larger and larger objective content which shall be constitutive of that life. In doing this the soul brings into its life objects which were previously outside of that life. This gives rise to feelings of pleasure and pain according as these objects tend or do not tend to enhance the development of the soul on the lines set down by the nature which it already has. But the nature of the soul is determined by the nature and unity of the objects which have already entered into its life; hence the springs of all moral activity must consist in the endeavour on the part of the individual to bring a certain unity of objective existence into his life or experience. Lotze recognises this when he says: "We believe that we could perceive, even in the merely sensitive life an inclination to assign to every content of sensation its proper place among

others, to find in every tasted pleasure that there was some intrinsic excellence in the thing enjoyed, to seek pleasure in all directions ; not merely in order to procure for self the advantage of a pleasant enlargement of life, but to seek, in inseparable connexion with this, to provide in one's very enjoyment a place where the worth of things and events may have an existence for consciousness".¹

Now although pleasure and pain cease to be the real springs of moral activity, still these springs are made by Lotze to reside in the individual as an individual ; for it is his desire to realise, in his own life, an objective system of worth that constitutes moral endeavour and gives rise to a moral order or union of souls. It is evident, however, that such a union of souls can only come into being if the order of worth which each realises in his own life is universal. It must be the same objective order of worth that must constrain all individuals to act in relation to it, and which, by so doing forces them all to a unity corresponding to, or determined by, its own unity. And Lotze is forced into taking up this position. He maintains that moral activity takes place in reference to what is good, beautiful, and just, and involves the existence of an objective goodness, beauty, and justice which extend over the whole of reality.

What has now to be determined is the nature of this objective goodness, and how spirits forming the moral union stand related to it. Lotze identifies the objective order of worth with the metaphysical unity of the world as found in the whole *M*, which is the basis of the reciprocal action taking place between material objects. This identification is carried out through a two-fold argument which he makes use of in seeking to prove that the unity of all things is a personal being. He maintains that the ethical attributes of wisdom, justice, and holiness are personal attributes ; hence the universe, which is pervaded by these must be a person. Again, he tells us that all action can only be thought of as the action of a self ; for it is only when we are conscious of our own activity that we are really active. The ultimate Real Being, which is the unity of all things, is essentially active, and in its single activity is to be found the ground for the multiplicity of changes taking place in finite things. If, then, we couple together these two positions we must

¹ *Mikrokosmos*, Bk. V., chap. v., sec. 8 ; English translation, by Hamilton and Jones, 4th edition, vol. i., pp. 713, 714.

arrive at the conclusion that all activity is moral activity proceeding from the Universe as a person. In the earlier stages of his investigations into the nature of reality, Lotze did not allow any room for moral activity as belonging to that which is constitutive of reality. He held that reality exhausts itself in three sides, namely: Being, Becoming, and Validity. Later, however, he is forced to find room for a moral aspect as belonging to the activity of objects. In the notes to his lectures in *Æsthetics* he maintains that "Reality manifests to us three realms or powers that involve one another, namely:—

"1. The realm of universal laws. . . .

"2. The realm of real substances and forces. . . .

"3. The definite and specific plan according to which these elements of reality are brought together under each other, in order to realise a definite end by their action according to universal laws."¹

Now it is evident that the third realm of reality in the latter classification is an order of value or worth not contained in the first classification.

So far we see all activity proceeding from order, and even although this order is centred in a Person, yet we have not arrived at a position different in principle from that of the Idealists. The position at which Lotze has now arrived is Kantian rather than Hegelian; he wishes to show how an order of purposes or ends can be realised in the world by means of mechanism carried out through the instrumentality of free individuals. A complete harmony of these various moments he calls Beauty, and he maintains that the fundamental unity of the world centres in Beauty.

The validity of the above position turns upon the possibility of making an order of worth centre in the person of the whole, *i.e.* in the life of the Divine Being; Lotze, however, fails in this. He held that worth or value consists of that which enlarges the life of an individual along the lines already laid down by its nature. Now enlargement of life may come in two ways; it may come as the gathering into life, of new content, or, as the ordering anew of content that has already been brought into life; for such ordering anew brings with it new experiences. The first way of enlargement is closed to the Divine Being, for there is nothing out-

¹ *Outlines of Æsthetics*, English translation by Ladd, p. 10.

side of Him which He can bring into His life. Is the second way of enlargement open to Him? This would only be the case if the life of the Divine Being were a striving to attain, or to conserve some purpose; it must be that the actual order of the Universe does not realise the purpose of the Divine Life; hence the Divine Being initiates activity within Himself, which will re-order the contents of His Life in such a way that they will realise the aims which He sets before Himself. Now the purpose of the Divine Life must be, either, an end to which the process of the world is directed, or, a form of Becoming which has continually to be maintained. If we hold to the first alternative then we must admit the existence of a principle of evil or chance which continually refuses to subordinate itself to the Divine Purpose. On such a view as this, however, the Divine Being cannot be all-inclusive, and the principle of Beauty, which is the principle bringing unity to this Life, cannot be the fundamental principle of reality. Lotze now tries to show that the purpose of the Universe is a form of Becoming; he maintains that this purpose is that of maintaining the Self-identity of the Universe; that it consists in the continuous establishment of the formula $M = M$. This means, however, that the identity of M with itself is subject to continuous disturbance. Such disturbance must come either from M itself or from something which is external to M . In one sense there is nothing external to the life of the Universe; the content of all that is or that takes place must be part of the content of the Divine Life. In another sense, however, all that is real "detaches itself from the Infinite" by possessing a consciousness or feeling of itself, which gives it existence for itself, and which is not shared by the Infinite.¹ Thus activity which disturbs the self-identity of M may be initiated in the self-feeling life of the individual, as such. Lotze is inclined to place the initiation of such disturbing activity in the individual. He supposes the equation $M = \phi$ ($A B R$) to hold; i.e. that the whole universe, at any moment, consists of a plurality of things and events $A B R$ unified according to a certain principle ϕ . He says: "If we allow ourselves further to assume that one of the individual elements has undergone a transition from A into (a)—however the excitement to this transition may have arisen—then the former equation between ϕ ($a B R$) and M will no longer hold. It would only be re-established by a corresponding

¹ See *Mikrokosmos*, Bk. IX., chap. iii., sec. 2, English translation, vol. ii., pp. 645, 646.

change on the part of the other members of the group, and $\phi (a B R) = M$ would anew express the whole nature of M .¹ In the next sentence, however, Lotze denies that change can be initiated by any single element going to make up the whole M , maintaining that all change is initiated by M as a whole. But if it is the whole M which changes when A changes to (a) , and if it thus changes in order to preserve its self-identity, why should it ever go out of itself into a condition where change is needed to re-establish itself? Lotze's answer to this question is that the nature of M consists in its being a "definitely directed process of Becoming".² Now, the process of the world, if directed, must be directed to an end or state of affairs that is determinate, and if the process of the world is real this state of affairs must be finally reached. When this takes place the process of the world would come to an end and we should reach final destruction—an impossible conception. The alternative to this is that the process of the world is not directed to any end but to its own self-maintenance. Lotze, however, will not accept this alternative; he wishes to maintain that direction always means direction to an order or system. He tells us that the process of the world has a meaning; that this meaning must be thought of as an Idea finding expression in each of the various forms which this process gives to the world; that these forms are related to one another in a systematic way thus giving us an order of Becoming. He says: "The relation, however, of the Idea M to the various forms, thus constituted, of its expression— $\phi (A B R)$, $x (a b r)$, $\chi [a \beta p]$ —is not that of a genus to its species. It passes from one into the other—not indifferently from any one into any other, but in definite series from ϕ through x into ψ ."³ It is evident from the above that this meaning of the world can never be exhausted; for if it could the process of the world would run through a limited and therefore recurring cycle of phases; such a process would not constitute Becoming for it would hold nothing essentially new. Still, even if the meaning of the world cannot be exhausted, and therefore known in all its fullness, yet there must be some way of giving expression to the process through which this meaning fulfils itself. Lotze tries to give us a solution of this problem; he takes his stand on a criticism of the Idealist position. He held that the Idealists had considered the Idea as a metaphysical prius which logically developed into, or subordinated to itself, a number of

¹ *Metaphysics*, sec. 70.² *Ibid.*, sec. 92.³ *Ibid.*, sec. 91.

lesser ideas, forms, or principles, which it imposed upon the world. But, Lotze points out, a purely abstract idea could determine nothing, and could not resolve itself into a plurality of meanings or forms. Again, the Idea M cannot be detached from its definite, determinate, and content-full realisation in concrete being. Now if the course of the world proceeds through a directed series of forms or phases, and if the Idea M is only real in each of these phases; then, since the idea determines the order of succession of the phases, each preceding phase must determine each succeeding one; that is to say, the connexion between the various phases of the world's history must be causal. And Lotze definitely puts forward this view. He says: "... the dialectic connexion between such phases of reality as stand in a definite order of succession, which was implied in their being regarded as an expression of one Idea, must pass over into a causal connexion, in which the content and organisation of the world at each moment is dependent upon its content and organisation at the previous moment".¹ But a difficulty now arises from this use of the causal relation. The causal principle involves the existence of a plurality of objects which act upon, and produce effects in, one another. A thing cannot act and produce effects in vacuity. No phase of the world as a whole can produce effects in another phase which does not exist. The only way in which, through the causal relation, a new phase of the world's history can come into being, will be by the individual objects existing in the world producing effects in one another, which will constitute this new phase. And Lotze admits this. He says: "The transition of one phase ϕ into the other χ is brought about by the combination of the reciprocal effects, which the several movements contained in ϕ once for all exercise in virtue of their nature, independently of the phase in which they happen to be combined or of the point in the world's course at which they from time to time appear".² But to take up this position is to maintain that, what forces the world to move from one phase to another does not lie in the world as a whole, but in the individual as an individual; and that we cannot find an objective system of worth centering in the unity of things, which shall guide the activity of the individual in his endeavour to constitute himself a member of a moral union of spirits. The systematic unity of the phases of the world's history is created by the free activity of individuals, as such, and can never be considered as logically prior to this activity.

¹ *Metaphysics*, sec. 91.

² *Ibid.*, sec. 92.

Lotze puts forward a theory to the effect that there is an order of spirits subject to the government of the Divine Being. Such a view is in agreement with the conclusion established above. According to this theory the individual must be outside of the Infinite, not merely in respect of the appreciative, feeling, or self-experiencing side of his life, but also in respect of his activity; he must be free. This freedom consists of the individual's power to initiate new series of events into the mechanical scheme of the world. The Divine Being and Spirits co-operate in the creation of circumstances of life, which will give to them a common experience of happiness; they do this by calling into being new sense contents, which form new links in the mechanical chain of events, thereby exercising guidance over these events. The guidance of the world is, therefore, not only spiritual, but also proceeds from the desire on the part of persons to find harmony in the possession of a common experience. It is not principles, or order, or system that is ultimate in reality, but a pluralism of persons.

There are, undoubtedly, very serious objections to this theory of Government, as held by Lotze. In the first place, it presupposes a division of the Universe into a material world, on the one side, and a spiritual world, on the other. This division is based on a false separation between feeling, or experience, and content, which is experienced. Lotze has tried to show that the sense qualities and the mechanical modes of behaviour belonging to a thing are not merely our experiences, which we group together and project with spatial and temporal forms, thus giving rise to a world which we call objective, and which we consider as external to ourselves; but that they also exist as constitutive of a conscious life, which forms the independent being of that thing. The distinction between an outer and an inner life, which gives rise to the view that we possess a material life and also a spiritual life, does not belong to the thing itself, but is made by those who are outside of it and can experience only part of its existence. A thing is a perceptual unity; it is what it perceives itself to be; its perception of itself and its 'being for self' are identical. The same is true of a human being; he is the unity of what he perceives in common with other perceiving beings. It is an interpenetrative, conscious, life gained through perception on the part of a plurality of self-feeling unities of sense contents, that constitutes the meaning and life of a person. Personal or spiritual life is not different in principle from material life; and there is no

justification, therefore, for holding that there is a realm of spirits standing over against, and acting in relation with, a world of mere things.

In the second place, by making spirits different in principle from things Lotze has been forced to centre freedom of activity in the appreciative side of the life of the soul. Activity centred here, however, fails in effectiveness; for it proceeds from and ends in, that which is vague, indefinite, and contentless. Lotze holds that the soul cuts itself off from the Infinite, not through limitation or separation of content, but through the exclusivity of feeling involved in the act of experiencing content. The unity of such feelings must be that in which spirituality rests, if it is to be distinct from materiality. But these feelings, according to Lotze, are those of pleasure and pain. He tells us: "It is in feelings of pleasure and pain that the Ego is first conscious that all its individual states belong to it and that its whole nature is affected; whatever proceeds from pleasure or pain, appears to us as a traction of our own nature".¹ Again he tells us that pleasure and pain are "the only springs of all practical activity".² Now the attempt to give to these feelings a content drawn from the nature of the experiences, which give rise to them, ends in the destruction of the separation between feeling and experienced content; this means that the soul or spirit cannot be distinct and separate from the unity of the material content, which is experienced. If this is the case activity must centre in living content and not in feeling; and the freedom of the soul as standing over against the material world and guiding its mechanical course from a higher point of view, is destroyed. If, on the other hand, the feelings are still regarded as constitutive of a soul life distinct from those things which are experienced, and if free activity is made to spring from these feelings, then such freedom is worthless; for mere feelings are contentless and cannot be a guide towards the building up of a world in which variety of content and of principle shall come to systematic unity. And on account of this Lotze is unable to tell us in what the supreme happiness consists, what is the purpose of the world, and what the Divine experience.

It is undoubtedly true to say that the main tendency of Lotze's philosophy is anti-Idealistic. His philosophy started in a theory as to the nature of material reality. This theory

¹ *Mikrokosmos*, vol. i., p. 687.

² *Ibid.*, p. 688.

was Idealistic. At the same time, however, he sought to bring this theory into line with his recognition of a spiritual reality, which was conceived of by him not in terms of Idealism, but in terms of Leibnitzian Pluralism, modified through the Kantian theory of Freedom. In order to effect reconciliation between these two worlds he introduced into the material system a thoroughgoing Monadism. But he did not introduce into the souls of things any moment of emotion or of will; on account of this things became cut off from inter-communicative intercourse with spirits. Again, he did not allow that spirits were also material contents; thus the spiritual world could not become material and hold within itself the rich content of living consciousness; and the material world could not become spiritual allowing itself to be guided by the intersubjective intercourse of free souls, which drew their life from the material content of the universe.

IV.—THE RELATION OF IDEA TO OBJECT-MATTER AS A UNIVERSAL MODE OF COGNITION.

BY CHARLES E. HOOPER.

1.—THE CONTEMPLATIVE POINT OF VIEW.

THE thinker cannot run away from his thought, although certain erratic and rhetorical thinkers attempt, as it were, to do so. My meaning is that, while it is very possible, when thinking, to transgress the rules of logic, it is not possible to escape the psychological conditions of thought, whatever these may be. One such condition may be described by the statement that thought is an essentially contemplative function, which, at least at the level of philosophic thinking, consciously detaches itself from any matter thought about. It always stands or seems to stand in relation to a correlative something or somethings, which may be called its *object-matter*, without assuming that this object-matter is objective rather than subjective; since the conscious self and its states and modes of consciousness are themselves object-matters to psychology. Thought involves a relation to object-matter, even when it seeks to relate itself to the immediacy of feeling, *i.e.*, makes feeling its object-matter. It remains speculative when its object-matter is practice, and even when it tends to promote present and personal action; that is to say, when some part of its object-matter becomes an object, in the moral or purposeful sense. It remains a strictly intellectual function when focussed upon emotion or sentiment (and although it may be actually accompanied by emotion or sentiment). Be he scientist or historian, physicist or metaphysicist, psychologist, sociologist, or ethicist, organiser of industry or practical politician, or merely a plain person who seeks to express certain opinions, the thinker is one who uses ideas, judgments, and inferences, in a way which is characteristic of thinking; not of immediate feeling, and still less of bodily activity. When, as in physical science, ideas and judgments are specially concerned with the physical

world, they remain subjective, or psychical, in themselves. When, as in ethics and political science, they are specially concerned with human actions and institutions, they themselves are still cognitive and non-practical.

2.—THOUGHT AND EXPERIENCE.

It is only by means of thought that any non-intellectual elements of experience can be known; though an equivocal use of the verb, to know, is apt to obscure this fact. What we feel we feel; what we have felt we know that we have felt, of course assuming that our memory is accurate. Any present memory of past experience and any recognition of anything as familiar is an instance of thought in its contradistinction to more elementary experience. Knowledge thus begins, not with consciousness, as such, but with reflection on earlier consciousness; though it is not necessary that we should be conscious of reflecting, or conscious of consciousness apart from some object as recognised.

While the subjective reality of experience, considered as the passing current of personal life, cannot be questioned by even the most sceptical of thinkers, the fact of having had certain feelings, which is the first condition of the ability to describe them and discuss their relations, is not in itself any guarantee that our descriptions or interpretations will be accurate. Indeed, while states of consciousness are empirically known in so far as the more interesting or arresting of them are imaginatively represented in retrospect, the adequate analysis and classification of the manifold and ever-varying contents of consciousness, and the explanation of their internal nexus, are among the most abstruse and disputable problems in all philosophy and science. One cause of this perplexity is the fact that, while several observers can be simultaneously aware of the same physical phenomenon,¹ and so can the more easily learn to distinguish such phenomena by recognised general names, each human being is obliged to reflect privately on his own experience and to imagine the experience of others in the likeness of what he finds in himself. In any deliberate attempt to analyse experience, he must indeed employ psychological terms which are the common property of psychological students, but it is relatively difficult for psychologists to agree as to the proper

¹ It is here obviously assumed that a physical phenomenon is something more than the subjective sensation which represents it to the individual; being, in fact, the object-matter of an idea which accompanies the sensation.

application of these terms to the contents of consciousness, which, as such, cannot be commonly observed.

Thought is at once a part or process-content of experience, the sole instrument for analysing, describing, and partially explaining, experience, and a necessary factor in ensuring that future experience shall differ from past or present experience in such ways as come within the scope of human volition. In the positive interpretation of experience, thought is constantly confronted with alternative possibilities of judgment, and has, at every step, to distinguish the true from the false hypothesis. When it estimates the good and bad elements in experience and furnishes reasons for conduct, there appear new alternatives between contradictory judgments of value or of proposed action, and a judgment is considered to be true if it selects the really good or rejects some really bad alternative. In these its essentially discriminative functions the character of thought seems antithetical to that of experience, as a process which simply *is*, or really passes, admitting of no doubtful alternatives, but being in some sense an immediate certainty. Nevertheless thought itself exists as experience, or is felt, quite independently of its evidential or ethical value, as something presented to the mind.

3.—THOUGHT AS PROCESS-CONTENT OF EXPERIENCE.

The only judgments which all men can readily agree to about their conscious experience—their life, in an intimately biographical sense—are, that it really passes and has in part passed, that it is temporarily lost in intervals of dreamless sleep or curiously travestied by dreams, and that, while they remain awake, it consists in a changeful flux of mixed elements, including all varieties of sensations, notions, judgments, emotions, and volitions; most of which repeat, with more or less exactitude, the character of some which have frequently appeared in the past. Any one of these elements or states of consciousness, whether simple or consisting in a consciously connected group or series, may, when conceived as actually passing, be termed a *process-content*; since, firstly, it forms a distinguishable part of the whole unique *process* of conscious life, and, secondly, it could not be distinguished from coexisting, overlapping, or immediately preceding or succeeding contents, without having some recognisable character of its own, which *content* implies. *Process* refers to a singular relation to the past course of life; *content*, to a general relation of similarity, or sameness of quality. Since any distinguishable element of conscious experience must

have relations of both sorts, the term *process-content*, as employed by Hodgson, seems preferable to such vague terms as "state," "phase," "element," of consciousness, which may be used in the same sense. Here we have a fundamental twofold certainty as to the nature of experience.

Thought enters as process-content into experience, both in the shape of memory and imagination which are not wholly contingent on the verbal symbols of language, and in that of predicative and discursive thought, such as is used in everyday speech or correspondence or in literary production. In either case, thought is distinguished from the non-intellectual process-contents of experience by its reference to object-matters which are usually not present to the senses, and are never present to the senses in the full concrete nature which particular material objects are conceived to have or in the full logical extension which belongs to universals.

The reference of thought to object-matter occurs as recognition, remembrance, anticipation, and imagination of familiar but absent objects existing in places other than those where we happen to be, long before it occurs as logical conception of some type of object, or mode of being, action, or relation, which may appear at any time or place, each of its numberless instances being called by one and the same general name. Empirical imagination of particular persons, "places," and things, with or without the use of proper and other singular names, is that which forms the fundamental stratum of thought considered as a part of experience; but this, of course, affords no data for science or philosophy, save as it gives rise to descriptive propositions whose predicates, at least, contain general or conceptual ideas.

What, then, of discursive thought, considered as process-content of experience? Evidently all thought which depends upon language is by certain persons at certain times experienced as passing in the mind. Terms and the notions attached to them, propositions and the judgments formulated as propositions, have no meaning except as thus related to the actual consciousness of individuals. This is true, notwithstanding that the audible signs of thought go from speaker to listener, and that the visible signs of it are preserved in manuscripts and printed books, etc., while the living brain or the sub-conscious memory (if that be anything different from the living brain) plays the part of a book of reference in which are preserved all those items of real or supposed knowledge which do not need, at a given moment of life, to be called to mind. Knowledge which thus remains sub-

conscious (as most of our knowledge always does) is indeed on a par with the text of a closed but readily available book, and any actual term or proposition or series of significant words constituting discursive thought must be newly experienced by the person who inwardly meditates it, hears or speaks it, reads or writes it, and has a simultaneous passing understanding of or effort to understand it. The experiential character of some piece of discursive thought thus passingly presented to the mind is independent of the greater or less degree of intelligence which is brought to bear on it, and is equally independent of its own truth or falsity. In the case of a single categorical proposition, the experience is that of a series of words to which there attaches the conscious affirmation or denial of something, no matter whether this amounts to personal belief or disbelief, to tentative judgment making provisional answer to some open question, or to imaginative make-believe, which creates or accepts a voluntary fiction.

4.—NOTIONS AS REAPPEARANCES OF IDEAS.

The term, *notion*, may be conveniently taken to mean, not only a distinguished content of thought, or intellectual experience, but a particular process-content of such experience. On this understanding, the same notion never recurs, since no part of the time-stream of experience ever recurs; but each notion (unless it be the first dawning of some idea on intelligence) is a particular recurrence of some previously formed *idea*. The idea has taken root in the sub-consciousness of the individual and gives rise to a long series of notions, through which it very possibly undergoes a progressive clarification and acquires an increased subjective intension. Such an idea (usually marked by an understood term, or by terms understood as synonymous) is thus a relatively fixed content, often reappearing as a passing notion, but never in precisely the same context as before, and not always as precisely the same content. In adult life at least there is no cognition which does not involve some recognition, but this recognition may be blent with novel elements, which enlarge or modify our idea of the matter recognised. In cases of actual perception, the fact of attention may disclose new characters in what was previously familiar, while the fact of engaging in studious contemplation establishes new connexions between a given idea and other ideas, which add to the value of the given idea as a nucleus of registered judgments. Thus eventually the idea may appear either as a given concrete subject, implying all the predicates known

to belong to it, as well as the one or two presently employed, or as a given abstract predicate, implying, at least indirectly, the whole variety of subjects to which it is known to belong. According to the suggested definition, a notion is merely a passing *specimen* of some idea, and may be a good or bad specimen according to the degree of attentive understanding which accompanies it, making it a centre of many judgments, understood, though not expressed, and thus distinguishing it from the mere recognition of some word or phrase. The thoughts which are actually experienced are always compounded of notions, as such, and never of ideas, as such.

5.—PERMANENT HUMAN IDEAS INDICATED BY LANGUAGE.

Whatever is signified either by a general name (understanding general names to include names of specific material substances and of specific qualities or relations¹) or by a singular name commonly understood (such as Venus, the earth, the Mediterranean Sea, Aristotle, the Reformation, the nineteenth century) is the object-matter of an idea which may be said to belong to humanity, past and present, and not merely to any individual; for language is obviously a collective product and possession, handed down from generation to generation. Studious thinkers may enhance the logical value, or increase the interdependence, of some of these ideas, and scientific discoverers may introduce practically new ones, but both thinker and scientist are in the main dependent on assimilating common knowledge by acquiring an individual understanding of common terms. We cannot throw original light on a subject, without accepting the light which has already been thrown on it; and, while the philosopher may possibly speculate for his own gratification, he cannot publish his thoughts except on the postulate

¹ The unity which pertains to one material substance, such as iron, or to one quality, such as sky-blue, cannot be properly regarded as singularity, though logicians have classed these names as singular. It is, in either case, the conceptual unity of a specific-general idea, the object-matter of which is universal, not singular. Logically speaking, iron and sky-blue are lowest species, in their several ways, not unitary things (or unitary thing and fact). Iron exists only as particular pieces or masses or traces forming, or contributing to form, locally-related objects, natural or artificial. It is these real—really conditioned and really conditioning—instances of iron which are properly singular. Similarly sky-blue can be predicated of many things besides the sky itself, and all particular instances in which the colour appears are the singular facts of which sky-blue is a generalisation. To call iron one metal simply means that it is one species of metal, and to call sky-blue one colour simply means that it is one species of colour. Each of these species exists only as a plurality of instances.

that what he states is actually or potentially common to the understandings of human beings at large. All particular words should be so understood and used, and, where necessary, so defined, as to have the same meanings in all cultivated minds. In this sense the appeal to experience and the appeal to reason are both appeals to a common humanity, of whose expanding consciousness science, taken in a sufficiently wide sense and as including the philosophical sciences, is the highest expression. The progress of science involves many unavoidable controversies, but, beneath these, there is always a large measure of solid agreement between minds trained to inquiry in any given direction, while even the most important changes of theory are compatible with a modified continuity of ideas. Barring the ethics-of-intellect controversies between knowledge and ignorance, inquiry and prejudice, reason and rhetoric, scientific caution and sanguine credulity, controversies themselves imply an extensive body of ideas common to the thinkers who engage in them.

The conclusion to be drawn from the present and the last Section is that all truly typical ideas and the ideal science of which they form elements belong to the whole of life rather than to the passing moment in which any of them appears, and to the life of humanity rather than to that of particular individuals. Of course the life of humanity referred to is a life composed of the lives of particular individuals; but it has its root-reality in the relation of contemporary mankind to a long ancestry, physical and spiritual, and always derives the great bulk of its ideas from the past. The essence of an idea is thus human-subjective, not merely ego-subjective, and an idea, as such, never transcends experience, if we understand that to comprise all experience of all human beings, dead and living. It does not, however, follow that an idea may not be the means of knowing an objective reality which does transcend human experience; for an idea, as here conceived, is essentially a mental representation or symbol referring to something other than itself, and whether that something lies in past or general experience or in objective reality related to experience is a question which cannot be decided *a priori*. Most contemplated human experience shares with objective reality in remoteness from the thought which contemplates it.

6.—THE OBJECT-MATTER OF IDEAS.

The use of the term, *object-matter*, was touched upon in Section 1. It may stand for whatever is clearly *referred to*

by thought; that is to say, by any mental image or understood term, when passingly presented to consciousness, and also by the acquired permanent idea which reappears in any such passing notion. Neither name nor idea has any meaning except as signifying something; which something is its object-matter. Thus the question as to the truth of a proposition is subsidiary to the question as to the true reference of its terms, or of the ideas for which they stand, to object-matters. This fact is recognised when we employ existential propositions, which assert in effect that this or that object-matter is not merely imagined, but has some valid mode of existence. As, however, we usually discuss object-matters of which we think that we have *some* positive knowledge, existential propositions are for the most part understood rather than expressed. This should not obscure the principle that the scientific or philosophic purpose of an idea, as a potential nucleus of judgments (being either subject of many possibly valid predicates or predicate to many possibly valid subjects) is to be *true* to some reality, not by any means to *be* or *be equivalent* to that reality; though, for logic and psychology and the higher sociology the idea has a secondary subjective reality of its own—a reality to which these sciences themselves supply the correlative truth. The relation of thought to object-matter from which it consciously detaches itself is, in my view, a universal and self-evident mode of human cognition. Of course this is no guarantee that any particular judgment is true or that an object-matter supposed to exist really exists; but, if a judgment be true, one necessary condition of its truth is that its terms correspond to genuine object-matters; if there be a knowable reality in question, it can be known only as object-matter of thought.

The more important object-matters or related groups of object-matters referred to by discursive thought are often called subject-matters, but this term contains a subtle ambiguity, tending to the confusion of thought itself with matter thought about. It may mean, not the supposedly real object-matter at all, but the full process-content of thinking in relation to a given subject, in contradistinction to the logical forms of thought employed. For instance, it may mean all the description, classification, and discussion potentially contained between the covers of a book on ornithology, instead of meaning the living birds and their habits and habitats, which are the object-matters of ornithology. Or, if English literature be said to be the subject-matter, this may mean the intellectual substance of those comparatively few books which treat of English literature, whereas the

object-matter is clearly the whole of English literature, so far as that can be investigated. In a small treatise entitled *The Anatomy of Knowledge* (1906, o.p.) I advocated the use of "subject-matter" in the former correlatively subjective sense, in which the subject-matter of a science always stands in relation to an object-matter far greater than itself. The subject-matter of any subject would thus be practically coextensive with the literature of that subject, as distinguished from the correlatively objective subject to which the literature refers. The important point is that thought, as a process-content of consciousness, such as may be derived from reading a book, involves the vital matter of imagination and conception in all its detail, with the language which implies that vital matter, as well as the formal facts of repeated predication and ratiocination. The logical form of thinking conditions the matter of thinking, but does not refer to anything outside itself. It is the *matter of thinking* which always refers to a quite different *matter thought about*.

7.—THE GENERAL RELATION OF TRUTH.

A relation involves at least two related object-matters, and, as so doing, is itself a threefold fact. It may be looked at from the respective sides of the two object-matters and may also be regarded impartially as belonging to the two together. If A and B be related, there is what may be called the *aspective* relation which A bears to B, the complementary *aspective* relation which B bears to A, and the *integral* relation which *subsists between* A and B. This integral relation is either *reciprocal* or *duomodal* according as the two aspective relations are the same or different in mode. There is reciprocal relationship if A and B are equal in magnitude or similar in all respects or in any given quality, if they co-exist in time, if they are so far distant from one another in space, if they are parts of the same whole, if they are brothers. There is duomodal relationship if A is greater than B or possesses a quality which B lacks, if A precedes B either in time or spatial procession, if A is above and B below, A a cause and B its effect, A a whole and B one of its parts, or if A and B are husband and wife, parent and child, teacher and pupil respectively. There is also a duomodal relation between a portrait and the person whom it represents, and between the notion attached to the figure, 3, and all particular cases in which three object-matters, such as distinct bodies or movements or sounds (as a clock striking three) occur together.

The relation between a good portrait and the person represented and that between the notion of three and all particular instances of three may, in either case, be said to be a relation of truth, or of a true symbol to reality, and my view is that all truth involves a similar essentially duomodal relation. The aspective relation borne by the symbol to the matter symbolised is widely different from that which the matter symbolised bears to the symbol; but, when the symbol is an idea, deliberately employed, it carries with it the consciousness of the twofold relation. It sees its completion as outside itself. It is a conscious and, in most cases, unlike that of the simple idea, "three," a consciously inadequate endeavour to represent some integral part of reality which cannot possibly be equalled by or identified with the representation. The idea itself becomes distinct and serviceable by expanding into a group of propositions verbally expressed, but, except in logic and literary criticism, the object-matter is not any such group of propositions.

Scientific truth is only the highest specialisation of a natural complex relation which appears in several other forms. That certain selected contents of immediate sensations, especially of immediate fields of vision, are true to real aspects of objects existing, or to relations really obtaining, in objective nature is the hypothesis on which all physical science is based. Fiction itself may truly illustrate the actualities or possibilities of human experience, and the figures of poetry and rhetoric contain truthful suggestions of various sorts. Dramatic, pictorial, and sculpturesque art always aim to be true, in fundamental respects, to perceived nature, although they may also aim at the idealisation of nature in the purely beautiful. Photographs and cinematograph displays are true, without idealisation, to the visible aspects of their object-matters. Even beyond the domains of human science and art, the peculiar relation of truth appears in the correspondence of outlined shadows to the actual shapes of objects, that of reflected images to the visual presentations of the objects themselves, that of echoes to sounds as originally produced, and that of impressions in plastic substances, such as footprints, to the objects which created them.

Neither in these subsidiary sorts of truth, nor in science itself, does truth ever signify a relation of categorical agreement. It never involves resemblance at all points or sameness of kind or quality. It always involves correspondence of what is correlatively symbolic to what is correlatively self-significant, with the concomitant possibility of endless

defects or degrees of *untruth* in the should-be symbol. If two things or facts or process-contents of consciousness are exactly like one another, or if, without being exactly alike, they are co-ordinated under the same specific general name, there is no *sense* in saying that the one is true to the other. They are both equally real, in their own mode of reality, whatever that may be; but neither is specially true to the other, and they are not necessarily true to any ulterior reality, as a true idea must be.

8.—GRAPHIC AND DISCURSIVE IDEAS.

It is evident that painted pictures can be much truer to the visible aspect of things than any so-called word pictures, while drawings of animals and plants and of their morphological parts are practically essential to works on biology. We could have neither abstract geometry nor practical geography without diagrammatic representations, referring in the one case to spatial possibilities and in the other to terrestrial actualities. The graphic ideas which tend thus to realise themselves, not in propositions, but in pictures and diagrams, play an important part in the building up of knowledge. Discursive ideas are, however, at once more widely and more intensively symbolic. They adapt themselves in their own way to everything which graphic ideas can be adapted to, and to much besides. They refer, not only to visual sensations, but to sensations of all kinds and to modes of consciousness which are not sensations at all; while, in connexion with visual perception itself, they—that is, understood names applied to what we see—serve to single out for special investigation certain particulars which appear in a field of vision, this being the first condition of the scientific method of observation. The chief of such particulars are material objects, known either individually or as specimens of some type or material, and intuitively credited with many qualities and relations other than those which are immediately observed. A material object is the object-matter of a concrete discursive idea, which may stand as subject to many different propositions. These, taken together, describe the object. The object's integral qualities and relations are the object-matters of the various predicates which form these propositions. Graphic ideas, on the other hand, can represent objects only by their imagined or delineated forms and groupings, but these, especially when delineated, may be much more accurately symbolic of real shapes, magnitudes, and local relationship, than any merely

discursive ideas could be ; while the attributes in question are of outstanding importance in the objective world.

Geometry, which chiefly depends on graphic ideas, is concerned with space as the fundamental condition to which the object-matter of the general physical sciences is subject. Geography, dependent on graphic ideas of a more determined sort, is a necessary foundation for the understanding of human history, and of the vaster history of that universe of which the earth itself is a member—the history which has astronomy, palæontology, and phylogeny for its branches, and with which the period of humanly-recorded time is connected through the earlier human period of which there are only archæological, ethnological, and philological evidences.

9.—THE PLACE OF IDEAS IN KNOWLEDGE.

Although knowing is never mere feeling, it is still necessary to distinguish between simple knowing and the consciousness of knowing. Simple cognition is common to the lower animals and human beings, and the human common-sense acquaintance with familiar things and their habitual actions, which does not need expression through language, may be regarded as a direct development of the intelligence of the lower animals. There is, in either case, a real relation of idea to object-matter ; but the only consciousness is of the object-matter ; not of the idea, as such, and still less of the relation, as such. Ideas do not become cognisable in themselves until they are symbolised by terms and connected through propositions, and, even when this advance has been effected, the relation of idea to object-matter remains obscure. It seems frequently to be confused with quite different relations, such as that of mental to material object-matter or that of attribute to entity ; while the idea itself is sometimes allowed and, in certain types of idealism, is systematically compelled, to take the place of its own object-matter.¹ On the other hand, in the pursuit of physical science, ideas are wholly subordinated to perceptions which indicate relations of observed phenomena, and their scientific use is a matter of necessary practice, in which the

¹The fact that Locke defines idea as "whatsoever is the object of the understanding when a man thinks," while an important section of his scheme is headed "ideas considered with regard to *their* objects," is a classic illustration of a wide-spread confusion of thought. My view is that ideas should be always "considered with regard to *their* objects," though psychology has also to consider their own character and origin. Locke's definition of idea is an excellent definition of what I mean by object-matter, a synonym for which would be thought-object.

scientist may take little, if any, theoretical interest. It is here that philosophy of knowledge is necessary to supplement physical science, and would be so even if our only certain knowledge related to the material world.

Thought, either expressed or understood, is the substance of knowing, and knowing, when fully conscious, is an intellectual attitude self-evidently distinguished from its object-matter; that is, from things or facts or values as known. While that sort of knowing which consists in true believing involves theoretically the absolute truth of single judgments, an idea, as the knowing of an object-matter, is always a relative mode of knowing, implying indefinitely numerous possibilities of judgment *about* that object-matter. It has not the definite sort of truth which may belong to a single statement, but has a far higher potentiality of true representation.

A statement in clear terms is either true or false; but an idea may be better characterised as either scientific or non-scientific. The scientific character of an idea is expressed formally by the proposition that its object-matter exists; but, if the object-matter does exist, it must have a variety of relations in the system of natural reality,¹ and the various propositions which state these relations, being themselves potentially contained in the idea, are much more important than the formal asseveration of existence. Non-scientific ideas are not necessarily false ideas. They are of two very different kinds, which may be termed fictitious and fictional respectively. Fictitious ideas are those which refer to mythical beings or to fallaciously-conceived things or occurrences. Fictional ideas, on the other hand, are those which are or may be concerned with naturally-imagined persons and events; these being treated as though they were historical, when in fact they are not historical, but may have great value as truthful illustrations of human nature and its environment. Both fictitious and fictional ideas *seem* to have correlative object-matters objectively existing; but fiction frankly admits the non-reality (not the non-verisimilitude) of its creations, and the object-matters of superstitious belief tend to disappear in an age of science. Hence practically all the ideas familiar to common sense and sober literature may be taken to have real object-matters, and the first purpose of philosophy is to clearly identify and concurrently classify these object-matters.

¹The universe itself must be somehow related to any one of its finite constituents, including any human idea formed of it.

An idea is, of course, relatively invalidated, or its real object-matter relatively obscured, when it is made either the subject or predicate of an erroneous belief; but this does not necessarily destroy its scientific value. Granting that we have learnt to use it in many true connexions, it remains, on the whole, a scientific idea. Thus, while scientific ideas and true judgments are both instrumental to knowledge, the ideas are the more comprehensive instruments; each being a centre of many connexions with other ideas, which connexions may be made explicit as some whole group of judgments, while no limit can be set to the possibility of adding new and true judgments to the group in question.

10.—THE INALIENABILITY OF THE RELATION: IDEA TO OBJECT-MATTER.

Neither scientific truth nor substantial reality is conceivable outside of the integral relation of thought to matter thought about. Nothing whatever, not even the simplest element of sensation, the most absorbing shock of emotion, or the most imperious resolve, not even any notion or judgment or idea, as such, can be known except *as* object-matter and *by means of* some correlative idea. It is by means of notions whose object-matter lies in the past that the course of our own lives is partially brought back to us. It is by means of notions or of relatively fixed ideas whose object-matter lies in the future that certain of our purposes come to be realised. It is by means of ideas whose object-matter lies in space that our own bodies, the bodies of other persons, and all physical things, are inferred to exist, and all physical events to take place according to antecedent causes and concomitant conditions. It is by means of an idea whose object-matter consists, partly of our own imagined body, partly of our own remembered experience, and partly of our own supposed character and purposes that we (more or less) know ourselves. It is by means of ideas whose object-matters are the actions, feelings, and intentions of persons with whom we come into social contact that our private passions are stirred; while ideas which have as object-matter the reported conduct of strangers, or the collective actions of States, parties, or other social groups elicit moral judgments of a more impersonal, though not always more unprejudiced, character. It is by means of ideas of all sorts, communicated, or at least stimulated into vitality, through spoken and written language, that divers human individuals realise their co-participation in a vast common object-matter of

knowledge—in a common objective world, a common human nature and understanding, a common heritage of culture, and (it may and should be) common ideals of personal and social, moral and intellectual, betterment.

11.—THE OBJECT-MATTER OF THE PHILOSOPHICAL SCIENCES.

That the fundamental object-matters of thought are not thoughts themselves is a judgment characteristic of experiential philosophy, with which physical science obviously agrees. Granting this, it is none the less true that thought itself is a legitimate object-matter for ulterior thought. It has to be analysed in any theory of knowledge. It has to be consciously employed for all the higher purposes of life. A large and important section of philosophical science treats of thought as formulated in divers languages and conserved in all sorts of documents and literature, which indicate the ideas and opinions, and, less directly, the institutions, customs, and aspirations of successive ages of human civilisation. Logic is more abstractly interested in this same province of discursive thought, being concerned with terms, propositions, and the valid methods of passing from certain judgments accepted as data to others forming conclusions. In these sciences of letters and logic, the object-matter contemplated is a fact of the same general nature as the contemplation directed upon it; but, though thought is here connatural with its object-matter, it is never coextensive with it. Statements and treatises about literature are a small minority among those which constitute the bulk of literature itself. A work on logic does not merely refer to such reasoning as is comprised in works on logic; it refers to the reasoning employed in any branch of science or systematic art or in everyday speech and cogitation. Thus, while the disparity between science and its object-matter is most obvious in the case of the physical sciences (*e.g.* that of astronomy, as compared with the stellar universe, including the solar system and the earth), the same general distinction is present in the case of those sciences which treat of subjective thought and reasoning, as such.

The distinction in question is also present in the case of sciences which treat of consciousness in all or any of its modes, or of psychical and physical (subjective and objective) facts in any of their relations to one another. The thought which *is* psychology is a small part of that totality of thinking and a still smaller part of that totality of consciousness to

which psychological inquiry is directed. The thought which is sociology is only one part of science, which is only one part of intellectual culture, which is only one part of the total human reality and relationships to which sociology refers. The thought which is ethics contemplates a range of thought, feeling, and action, much wider than its own embodiment in ethical theory and precept; it has or should have in view all those ideas and judgments by which any persons, on any occasions, estimate what is right or wrong conduct in themselves or others, and all those volitions whereby they subordinate, or fail to subordinate, the lower impulse to the higher purpose.

12.—THE OBJECT-MATTER OF PHILOSOPHY (OR OF METAPHYSICS).

Philosophy itself is a limited province of human-subjective thought; yet its object-matter is boundless, and is not merely liable to indefinite further discovery in a strictly "given" direction, as is the object-matter of any departmental science. When *any* science expands in its own direction, the new object-matter which it brings into view is also brought into view of philosophy; since philosophy regards the related object-matters of all departmental sciences as parts or aspects of one supreme object-matter—the real universe. But while no reality is essentially irrelevant to philosophy, it is obvious that the philosophic thinker does not and could not study the object-matters of all the sciences in detail. He is rather concerned with the whole system of science as it relatively reveals the system of reality, and is therefore especially concerned with those fundamental modes of being, knowing, and relationship which are implicitly or explicitly referred to by all sciences or by important groups of sciences or which cause the lines of cleavage between the great departments of science. The relation of idea to object-matter, or of possible truth to reality, is, as we have seen, implied in all science without exception. The chief line of cleavage in science lies between the objective and subjective planes. Common sense which is not refined by the habit of reflection and physical science which is not chastened by psychology assume a direct knowledge of physical reality. Modern philosophy, in all or most of its schools, recognises that this knowledge cannot be really direct, and certain types of philosophy, which would make all things equate either with conceptual ideas or with series and groups of sensations, deny that it is knowledge of objective reality at

all. The present article may at least suggest a somewhat new way of approaching the problem ; a way which would call for an intimate blending of logic and psychology in the metaphysics of nature. The problem is not, as it is often supposed to be, how subjective experience, as such, can be the means of knowing objective reality ; but how ideas which are essentially contemplative and which shape themselves through predicative thought (a process-content of experience) can be a means of knowing experience which is not predicative and not contemplative, and using this relatively outer experience as evidence of objective reality.

What is needed is to bring discursive contemplation into relation to actual perception, by which I understand sensation intelligently attended to, not apprehension of intellectual or moral process-contents. We must analyse that sort of perception which takes the form of passive or spectacular observation, and also that other sort which accompanies bodily or manual movements and is the sign of practical volition. We must bring the three modes of attentive consciousness—contemplation, observation, and conscious physical action—into relation with one another and simultaneously into relation with things whose existence is different alike from that of thoughts, that of sensations, and that of actions ; but to which nevertheless all our physical actions, and most of our thoughts and sensations, are consciously directed. (An important minority of thoughts refer, as we have seen, to consciousness and its modes, as such ; while some sensations have an æsthetic, rather than an epistemological, value.)

Granting that the existence of a world of material objects, moving in space, and not contingent on the human consciousness by which they are known, can be sufficiently demonstrated, the philosophic thinker will not stop short with any such demonstration, but will proceed to focus his thought on object-matter of more direct human interest. Physical things and processes are not ends in themselves, but may be inimical to human purposes and are at best necessary means to certain conscious satisfactions or ameliorations of life. The thinker may thus pass, without logical contradiction, from a naturalistic realism to a humanistic idealism.¹ Consciousness, in its various relations,

¹ Those who can see nothing analogous to reason in the processes of cosmological and biological evolution may nevertheless be able to trace a modified sort of Hegelian dialectic in the large rhythms of human history ; since this is a field in which ideas and beliefs do exist and do, through purposeful actions, individual and collective, influence the course of events.

is all that essentially matters to mankind, and that which chiefly matters is to substitute the higher for the lower consciousness—serious inquiry for self-satisfied ignorance, science for superstition, wisdom for dull-wittedness, appreciation of the beautiful in nature and art for sordid conventionality and indifference, and higher for lower ideals of human fellowship and citizenship.

While the first object-matter of philosophy is reality at large, this object-matter can be approached only through the subjective and selective processes of scientific thinking, and such thinking belongs to the second object-matter of philosophy—the human microcosm. The outer aspect of this microcosm is the collective persistence of the interacting civilised nations which form the still very imperfectly united Body of Humanity. Its inner aspect is the stream of valid ideas, true inferences, and fruitful ideals, which survive and grow from generation to generation, constantly reacting on law, custom, arts, industries, professions, and conditions of wealth and population, and forming what may be fairly called the Mind of Humanity. This too is at present a very imperfectly united Mind; yet a fuller intellectual unity of mankind should be and may be attained, and must, in its attainment, produce a correspondingly fuller unity of social and international life.

V.—DISCUSSIONS.

REALISM, PRAGMATISM, AND WILLIAM JAMES.

PROF. PERRY'S Discussion in No. 94, while it advances matters in several not unimportant directions, leaves me still unconvinced of the importance (or wisdom) of making the controversy between idealism and realism the one issue in philosophy. I agree however that there are more important questions to discuss than that of whether this controversy is important. So I am content to repeat in a general way that my objection rests on the enormous number and variety of doctrines labelled realism and idealism, on the difficulty of distinguishing many called 'realism' from others called 'idealism,' and on the distressing unprogressiveness and sterility of a controversy which has endured inconclusively for hundreds or thousands of years.¹ I would point out further that 'realism' and 'idealism' are not the only alternatives, and that the actual philosophic systems can nearly all be classified as 'realism' or as 'idealism,' according as one chooses to emphasise one side or another of them. If it is not considered a fatal objection in philosophy to show that the alleged alternatives under discussion are neither (1) determinate, nor (2) clearly distinguishable, nor (3) exhaustive, that would seem to be not so much an argument for the discussion as against philosophy.

I.

While protesting therefore against Prof. Perry's way of speaking of 'the philosophy known as idealism' and finding myself able to discriminate about a dozen 'new realisms,' I am quite willing to discuss *his* particular doctrines, which seem to me to illustrate, very subtly, confusions which are of great logical importance, and well worth analysing.

(a) To begin with that marvel of philosophic nomenclature the Ego-centric Predicament. I am relieved to hear that when Prof. Perry called it "one of the most important original discoveries that philosophy had made" that was 'writ sarcastic'. I regret

¹ For detailed argument in support of these contentions I must again refer to *Studies in Humanism*, chap. xx.

only that one who is capable of being "mildly ironical at the expense of philosophy," should not after that have suspected "an author of *MIND*!" of irony in suggesting that certain terms are "most useful when their meaning can be made to vary as required".¹ But while it seemed worth while to get the verbal discrepancy between *Phil. Tend.*, page 129, and *MIND*, No. 88, page 545, removed by Prof. Perry, I did not seriously suppose that he literally meant either that the Ego-centric Predicament was one of the most important philosophic discoveries, or that nothing at all followed from it. And in spite of what he now says (p. 242), I still cannot suppose it. For the 'Predicament' has at least the power to rule out two of the most popular opinions in the realism *v.* idealism controversy. I cannot seriously suppose that when it is acknowledged that no argument *for* idealism can be based on the Ego-centric Predicament Prof. Perry's realistic heart is unmoved, even though his withers may be unwrung when what I called "a strictly transcendent reality" is ruled out similarly. At any rate he can hardly regard it as unimportant that as he himself says "we must look elsewhere" for evidence bearing on the dispute between idealism and his form of realism. For that seems an important inference, though of questionable soundness. It not only assumes that the issue is a good one, that his realism must be capable of being established (as it is natural enough for him to assume), but it overlooks the possibility that the situation entitled the Ego-centric Predicament may be so ultimate a fact that it may be useless to look beyond it and impossible to give a meaning to the questions raised about it.² This possibility has the advantage of being the simpler alternative. Now simplicity and economy of thought are probably suspect to Prof. Perry as savouring too much of pragmatism, but he might note that so good a 'realist' as Mr. Bertrand Russell has been resorting to Ockham's Razor as an effective weapon for cutting Gordian Knots. However as I merely wish to remind realists of the fact that there are other alternatives to realism besides idealism, I will

¹ I fully recognise that there is always a certain amount of *unavoidable* ambiguity, entailed by the progress of science when it proceeds to discriminate further within terms that were sufficiently determinate for previous purposes. Thus the modern principle of Relativity has rendered ambiguous the old notions of 'where' and 'when,' and the metageometries the whole of geometrical terminology. But the amounts of ambiguity and indefinition which philosophers habitually have in their fundamental conceptions are far from unavoidable, and constitute a scientific scandal.

² Hence I cannot admit that Prof. Perry has shown that "the question is whether our reals, or known reals, require to be such in order to be reals" (p. 241). That seems to me to be a bad question, in point of method, because I can see no way of answering scientifically a question to which a good answer cannot be discriminated from a bad one by any scientific process.

pass to Prof. Perry's interpretation of the situation in terms of his own doctrine.

(b) Here I will not complain that Prof. Perry begs the question by describing the facts in terms of his theory. For I know too well that although logic has long regarded arguing in a circle as a fallacy and arguing in a system as an ideal of proof, it is unfortunately not yet able to distinguish formally between them.¹ But Prof. Perry appears to misdescribe the facts, because he relies too much on common speech and does not rise to a sufficiently critical level. He should have raised the general question of how we distinguish between the cases in which we say the process of perception has affected the 'object' perceived and the cases in which we say it has not. Why, *e.g.*, when the visible size of a body changes, do we sometimes regard it as having *changed* and sometimes as having only *moved*? Why, when we perceive an object that seems familiar, do we sometimes say it is *the same* as something we perceived before, sometimes that it is only *like*? If Prof. Perry would consider such questions he too would probably note, (1) that until a subject has been pretty fully explored, there is always a doubt and alternative views may be taken, (2) that the rival theories are always valued and tested by their consequences, and (3) that the decisions as to what the object perceived 'really was' is, and remains, relative to the evidence on which they rested, and to the relative value of the theory accepted as compared with others alleged then or later. A theory so accepted is plainly not an absolute truth nor a cognition of absolute reality. Its 'truth' remains immanent in man's struggle to know his world, nor is any way of taking it out of this context visible or needed. To think that because we commonly say that to get good results we must guard against certain 'errors of observation,' we must be dealing with metaphysically independent reals is surely to misinterpret a *façon de parler*. Just because it is an "elementary maxim of observation" that conditions which *have been found to be detrimental* to the value of observations must be eliminated or discounted (if possible), we must beware of erecting a metaphysic on such an obviously pragmatic distinction.

In short the pragmatist objection to Prof. Perry's theory is that it makes out no case. It may freely be granted that when we have realised that a certain relation to mind is a condition of observation, we may raise a question as to how far this condition matters, and may conceive the ideal of discounting it completely. We may even say that the question is 'left open,' if we merely mean that no metaphysical solution of it is in sight. These concessions do not touch the point. To have a meaning, questions have to be proved soluble, and ideals applicable. The real question therefore is as to the burden of proof. Does it fall on the 'realism' of Prof.

¹ Cf. *Formal Logic*, p. 360.

Perry or of the pragmatists? The latter is simpler, because it affirms nothing metaphysically. Nor does Prof. Perry make any attempt to show that it cannot adequately describe scientific procedure. His own theory, on the other hand, has to make embarrassing admissions. "The Martian canals may be in the telescope" (rather, in the *seeing*), "things generally may be created or conditioned by the human conscious approach to them," and "illusions, secondary qualities" (+ hallucinations, after-images, dreams, misinterpretations, etc.) exist. Surely this is to admit the urgent need of *discriminating* all these things from true perceptions of completely objective reality. It is not enough to say they form "a limited class," because no one knows, or can know by any realist metaphysics, where the limits of the class are laid down. Moreover scientific investigators are in practice very well aware that every observation is liable to error and none is exact, and are entitled to demand from philosophers a systematic 'theoretic' recognition of these facts, and a repudiation of their utterly unscientific claim to possess infallible knowledge of indefeasible reality.

It seems clear therefore that Prof. Perry has, after these admissions, undertaken an extremely difficult task in showing that these sources of error *are* capable of total elimination and that inerrant observation exists, and the pragmatic realism, which does not go beyond the acknowledged facts into metaphysics, occupies a far more defensible position than either idealism or Prof. Perry's realism.

(c) I agree with Prof. Perry that the conception of *independence* is 'crucial' for his theory, and appreciate his efforts to define it. But I do not see that he has attempted to answer my simple logical objection to his definition. The objection was that he defined 'independence' merely in negative terms, as the absence of certain specified sorts of dependence, without offering any guarantee that his list was exhaustive. That such a definition is objectionable is taught even in formal logic, which can generally tell thinkers what they should not do, even though it is never able to tell them what they should do. If Prof. Perry replies that a negative term must be defined negatively, I must reiterate my doubt whether his conception of independence is negative. It seems to me very positive, and the basis of his whole metaphysic. At any rate he has *not* told us how he proposes to guard against the possibility that his enumeration of the forms of dependence has not been complete and that his 'independence' should have been included among them. The dictum, therefore, that "entities are independent unless they are proved dependent" (*New Realism*, p. 122) contains a logical fallacy.

(d) I note that Prof. Perry wishes to add to the usual meanings of 'transcendent,' and to define it as "that which is independent of the relation to cognising or experiencing mind" (p. 243). But

what is this but to reiterate that the notion of 'independence' is vital to his theory? And if this is the meaning demanded by "the American neo-realists," I can only deplore that they should have found it convenient to import this further ambiguity into the term. For it was already hard enough to determine in any particular contest in what sense the 'transcendent' transcended experience (whose? and how?).

(e) Prof. Perry's (realistic?) distinction between "knowing" and "viewing things knowledge-wise" seems to me unnecessary, and I should dispute also that the latter "inclines the mind to the view that the cognitive angle or relationship is essential to the things". We learn, however, from the remark that (in Prof. Perry's mind) this distinction depends on the prior distinction between the *essential* and the *accidental*. Now this is one of the vaguest and most elusive of the antitheses in the philosophic vocabulary, and it would be interesting to hear how the new realism conceives it. Does it endorse the old usage, which is intelligible (though not perhaps defensible) in the context of the Aristotelian philosophy, but is now gravely suspect of being scientifically out of date? Or would it accept the pragmatic interpretation which defines the 'essence' of a thing as whatever is 'important' for a purpose and as 'accidental' whatever is similarly irrelevant? Or will it denounce these definitions as 'subjectivistic,' without giving any definite meaning to the terms? On my 'correlation' theory on the other hand there is no need to decide whether the relation of objects to minds is a 'necessity' or an 'accident'. There is a third alternative: it may be simply a *fact*.¹ Moreover, however much it is abused as an 'accident,' it nevertheless remains a fact.

(f) I fully recognise that several realists have made attempts to deal with "the special difficulties connected with illusions, hallucinations and errors," and in this respect shown themselves superior to their idealist rivals. But these attempts do not seem to me to have been attended by any considerable measure of success,² and they fail completely to grasp the enormous theoretic significance of the problem of error and unreality and the need for a general philosophic account of it. This is not the occasion to establish these conclusions, but it may be pointed out that the excuse Prof. Perry gives for ignoring the relevance of error and unreality to his theory of reality is far from convincing. To consider it "would at most lead one to a differential or dualistic view, in which one would recognise certain peculiar *exceptions* to the rule that what is known is independent of that fact" (p. 243). But is that a sufficient reason for disavowing a fact, and had he not committed

¹ I am sorry, therefore, that I cannot explain to Prof. Perry why it should be a 'necessity': ever since reading Hume, I have been unable to understand what meaning an 'objective' necessity could have.

² Cf. *Aris. Soc. Proc.*, vol. x., pp. 218-231.

himself to just this 'dualism' by admitting (p. 241) that errors of observation, etc., occur?

To sum up, we appear to have gained from Prof. Perry an explicit repudiation of reals *per se* which are strictly transcendent, and therefore unknowable, and of which the reals which we all practically recognise in our experience and treat as pragmatically real and 'independent' and superior to the unrealities in which they are involved, are only representatives, intimations, or adumbrations. And this is a great gain. It reduces the difference between the pragmatic realist and the neo-realist to a question whether it is legitimate and advantageous to allege that the 'immanents' which exhibit certain properties and behaviours when we know and observe them, must also do these (or other) things when no one is looking. To the pragmatist this allegation seems unnecessary, sterile, incapable of verification, and therefore scientifically null; it accords indeed with a certain amount of popular phraseology (which is capable of explanation), but it adds nothing to our knowledge of our world. It is therefore best regarded as an 'over-belief,' which need not be forbidden, but certainly should not be insisted on. To the 'neo-realist,' however, who has made his reals strictly immanent, a further question may be suggested as to whether they can satisfy the demands of physical science. For physics appears to postulate reals, like atoms, electrons, ethers, etc., which not only are not perceived, but cannot conceivably become objects of perception. It would seem therefore that they are strictly 'transcendent,' and incapable of being 'immanent' in experience. The neo-realist therefore must either revert to the transcendent reals he had disavowed, or he must agree with the pragmatist in construing these entities of physics as pragmatic constructions which are relative to, and justified by, the scientific success which attends their working, but should *not* be construed as metaphysical assertions. It will be interesting to see which alternative neo-realism will find more tolerable.

II.

As regards Pragmatism, it is satisfactory to learn that Prof. Perry does not dispute its psychological case for denying the absoluteness of the distinction between 'theory' and 'practice'; but it seems doubtful how far he has appreciated, and certain that he has not exhibited, the significance of this denial. At any rate he does not appreciate, even now, how hard it is to analyse what passes for 'truth' into its various component values and to determine what part various motives play in the acceptance of what appears to be a 'theoretic' truth. And it is surely an egregious delusion of the academic chair to imagine that first of all there are truth-values, established by a pure dispassionate contemplation of an absolutely objective reality, and that they are thereupon sub-

jected to deplorable corruption by the infusion of volitions and emotions and non-theoretic values, all of which it is the sacred duty of philosophy remorselessly to excise. In actual fact no 'truth' is established without the stimulation and cooperation of the very agencies which are declared to be fatal to its truthfulness, nor can the most careful analysis ever make sure that it has uncovered all the ramifications of the interests that make all belief so intimately personal an affair. If only philosophers could be got to face the facts of actual life, could any of them fail to observe the enormous object-lesson in the truth of pragmatism which the world has been exhibiting in the present crisis? Everywhere the 'truths' believed in are relative to the nationality and sympathies of their believers. It is indeed lamentable that such an orgy of the will to believe should have been needed to illustrate the pragmatic nature of truth, but who will dispute that for months say 999 persons out of 1,000 have been believing what they please, and consciously or unconsciously making it 'true,' with a fervour rarely bestowed even by the most ardent philosophers on the most self-evident truths? No improbability, no absurdity, no atrocity has been too great to win credence, and the uniformity of human nature has been signally attested by the way in which the same stories (*mutatis mutandis*) have been credited on both sides. But this, we shall be told, is all 'the fog of war': when peace is restored, truth will reappear in her pristine beauty, and events will be seen in their real outlines. What reason is there to anticipate anything of the sort? With the best intentions to be 'objective,' will not historians still find the evidence defective and contradictory and the motives of the actors conjectural? They will all therefore have to select and reject, and each will write history as the truth has appeared to him. And what would happen if the victors prevailed so utterly as to establish their version of the truth? Would not the divergent accounts be voted down as false? According to Prof. Perry some of these may deserve to be called truer, but is it not amazing that he should regard the situation as not in the least derogating from "the theoretic truth" of the beliefs that are rejected? It is not the part of Pragmatism to prescribe *a priori* what value-claims shall prevail over what; but it may at least claim to have discovered a problem of profound social significance in what is facetiously described as 'theoretic truth'.

III.

As regards the third part of Prof. Perry's paper, I am rejoiced and relieved to hear that we are to have a reprint of James's Californian Address after all, and that I was wrong in supposing that the volume of "papers having biographical or historical importance" mentioned in the Preface to *Essays in Radical Empiricism*,

portended only a continuation of *Memoirs and Studies*. I am glad also to have elicited from Prof. Perry a defence of his exegesis of James, even though it appears to proceed on the militarist principle that the best defence is to take the offensive, and implies that it was the duty of my review to provide a completely elaborated alternative to his interpretation of James's work. I thought myself it was enough to challenge his interpretation, though I regret that my criticism should have annoyed him so much. I do not however feel unequal to propounding an alternative which will bring in harmoniously all the many sides of James's philosophic activity, his psychology, his pragmatism, his interests in religion and psychical research, as well as his radical empiricism, if Prof. Perry will only tell me where precisely in the *Essays in Radical Empiricism* he regards James as having committed himself to a 'new,' as against a pragmatic, realism.

The references he has so far given are not, I think, relevant to this issue. They refer to utterances no pragmatist could fail to welcome, least of all myself. On the other hand they do *not* include James's pithy reply to Prof. Perry's collaborator, Pitkin, who had attacked him for saying that "to be radical, an empiricism must not admit into its constructions any element that is not directly experienced". James proceeded to explain that "in my own radical empiricism this is only a *methodological postulate*, not a conclusion supposed to flow from the intrinsic absurdity of transempirical objects. I have never felt the slightest respect for the idealistic arguments which Mr. Pitkin attacks and of which Ferrier made such striking use; and I am perfectly willing to admit any number of noumenal beings or events into philosophy if only their pragmatic value can be shown."¹ Precisely, *if only their pragmatic value can be shown!* *Je ne demande pas mieux*: James's realism is pragmatic, and means very much what I said *sub I*.

As for the *Journal of Philosophy* papers of 1904-1905, it may, as Prof. Perry has been charitable or rash enough to imagine that I had not read them, advance matters, if I state what was my attitude towards them at the time. I was of course greatly interested and delighted by them, as by all James's writings, and ac-

¹ *Ess. in Rad. Emp.*, p. 241-242, from the little three-page polemic which alone dates from 1907, and detracts from the entire accuracy of Capt. Knox's dates, 1884-1905, for the contents of this volume. In point of fact Capt. Knox has by no means neglected it and quotes from it as often as from *Pragmatism* (five times, as against once from *The Meaning of Truth*). I quite understand however why Prof. Perry dislikes his book on James. It is based chiefly on the *Psychology*, and exhibits James's philosophy as an application of the principles there laid down, holding that "when the main drift of that work is properly understood, the organic unity of James's teaching becomes manifest". But as the *Psychology* is admittedly James's *magnum opus* and as Capt. Knox's account is made up mostly of quotations, those who dislike it will have some difficulty in disposing of it.

cepted the great mass of their doctrine, cordially agreeing, *e.g.*, that relations are experiential facts, and that to reify 'consciousness' and to regard it as an entity was pragmatically uncalled-for. But I ventured to think that in certain passages the statement was so ambiguous or incomplete as to be liable to misconstruction. I pointed some such difficulties out to James, who with his usual candour admitted their existence; and it was on the strength of this correspondence that I doubted whether James would have republished these papers as they stood. I believe that he would have improved them greatly and have removed my scruples. But whether these scruples referred to the very points Prof. Perry regards as conclusive in favour of his interpretation of James, I cannot say until I know what these points are.

Further, I was of course aware that James had finally adopted Radical Empiricism as the technical name for his metaphysic, and regarded the pragmatic method as leading up to it. But I wonder whether Prof. Perry has also noted another fact, *viz.*, that the meaning of the term varied during different periods of James's life, and that originally it covered his 'pragmatism' and underwent progressive specialisation?¹ One must be careful therefore not to assume that wherever the words occur James means the same doctrine or the same *part* of his doctrine.

Lastly I cordially agree with all that Prof. Perry so finely says about James on pp. 248-249. It shows that where his own pet metaphysics are not concerned he can see the truth about James. But I do not see why his appreciation of James should lead him to disparage Bergson, or to accuse me of identifying their doctrines. I am of course well aware that great and technically important differences exist between them. But is it never permissible to dwell on the spiritual affinities and mutual comprehension of two great philosophers without any pettifogging insistence on arid technicalities?

F. C. S. SCHILLER.

¹ *E.g.* in the Preface to the *Will to Believe*.

THE NECESSITY FOR A UNIVERSAL IN REASONING.

SOME of Dr. Mercier's remarks in the last issue of *MIND* call for a brief reply. The subject nominally under discussion was the necessity for a universal in reasoning. Very little was said on the matter nominally under discussion. Dr. Mercier's remarks were discursive and dealt with a large number of subjects, and principally consisted of lengthy comments on a few isolated remarks of mine and on the merits of his own *New Logic*. With regard to myself, I am highly flattered that so much space was occupied in discussing anything that I may have written, but I should prefer that it be devoted to such attempts as I have made towards the advancement of knowledge and of philosophy rather than to unimportant side issues. With regard to the *New Logic*, I am strongly of opinion that the claims that Dr. Mercier has made should be carefully and critically examined. I am willing to write a criticism myself should a fitting opportunity be provided, but I cannot undertake to review his work incidentally in a discussion nominally on the subject of the necessity for a universal in reasoning.

A large number of points raised by Dr. Mercier are too trivial or too irrelevant for reply. I am perfectly willing to accept his word that he has used no arguments at all concerning Dr. Bosanquet, but merely made an assertion. So much of Dr. Mercier's discussion consists of similar assertions that I may be pardoned if I thought that they were intended for arguments. I do not propose to waste time discussing whether or no it is possible for Dr. Mercier to develop an incapacity. Had I suggested that he was developing stupidity, it would have been less open to trivial verbal criticism, if less polite. Nor do I think Dr. Mercier's lengthy exposition of the thesis that constituted authority is sometimes wrong appropriate when addressed to me who am probably noted, more than for anything else, for finding practical instances of that very stale truism. But the truism does not imply that constituted authority is always wrong.

On the subject of the *New Logic* I am accused of having written an account of the book which was a travesty, and of jumbling it up with six or seven other books I was reviewing at the same time. As this matter is somewhat important, I must ask for space to deny this statement which Dr. Mercier has made both here and in the columns of the *Nineteenth Century*. The truth is that I

have nowhere and at no time reviewed his book. An article in the *Quarterly Review* such as mine is not, and is not intended to be, a review of books ; it is an account of the state of thought and discussion of the subject logic. The references to the works mentioned are incidental, and are conditioned by the general trend of the article. This does not mean that the writer of the article is at liberty to make incorrect statements of fact concerning the books mentioned at the head of the article or any others. It does mean that he is not required to give any account of them whatever beyond what is necessary to the discussion. The statements of fact with regard to Dr. Mercier's book are few but strictly accurate, and the expressions of opinion refer to his book and to no other. It is as well to add that, when Dr. Mercier made statements of fact about that article, those statements were patently and demonstrably false. For the purposes of that article the ground of interest in Dr. Mercier's logic was that, while it was an attack on scholastic and Aristotelian logic, it differed from other attacks in that it did not quarrel with the ideal of formal validity, but attempted to displace academic logic by another system, which was, in the main, equally formal. Dr. Mercier will probably not understand the meaning of this sentence, but it will be clear to every one acquainted with the trend of modern discussion. On the merits of Dr. Mercier's alternative system and on its details I have expressed no opinion. Nor can I do so now.

The one thing that calls for a brief explanation is what I meant by saying that he made a hotch-potch of the processes of induction and deduction. I somewhat regret making the statement because it involves me in a discussion which should be deferred to a formal review. I was referring, among other features, to page 203 of his book where the induction and the syllogism are compared. I quote the first of six differences.

"The syllogism has three terms and no more than three. The fallacy of four terms is the cardinal fallacy of the syllogism, and *ipso facto* (*sic*) falsifies any syllogism in which it occurs. The induction contains four terms and cannot be constructed with less than four."

I think the implication of a sentence such as this will be plain to all who claim competence in logic. It would not be reasonable to condemn as unphilosophic all who think that induction can be reduced to a regular demonstrative theory. That was the view of Mill. Nor is a logician necessarily ignorant who maintains, as does Mr. Alfred Sidgwick, that the differences between induction and deduction are unimportant and of degree rather than of kind. Although I disagree with both views, no one will dispute that both writers have a clear understanding of the implications of the views they are putting forward. They may be wrong, but they are consistent, and the respective views are clearly in keeping with the authors' general systems. But when an author, writing in 1912,

who pretends to instruct logicians in their own subject, starts off *in medias res* to inform us that there are two different kinds of reasoning, deduction and induction¹ and the differences between the induction and the syllogism are mainly to be found in the numbers of terms, propositions and premises, the description hotch-potch may be slang but it is a description. The question which naturally occurs to the reader is whether or no the author has the remotest glimmering of the number of controversial philosophical questions which are assumed. Neither his book nor his subsequent writings indicate that he has. As an example I will only mention one discussed by Mill and his contemporaries and now generally regarded as being decided in the sense opposite to Mill: Is it theoretically possible to reduce induction to a regular demonstrative theory like the syllogism? The general consensus of logical opinion may be wrong, but the point requires intelligent discussion. With these comments I must leave the merits of the *New Logic*. I have no space to explain the meaning of the phrase, the sphere of logic and the sphere of life. It is certainly not that suggested by Dr. Mercier. I must also decline now to be drawn into a discussion on any points concerning the *New Logic* not previously mentioned or dealt with by me.

A word or two is required on the question of universals. In these remarks I am considering only deduction, of which the *a fortiori* is certainly an example. Dr. Mercier suggests that I have not found the universal because there is none. To which I reply that I have found the universal. So far as the present argument is concerned, Dr. Mercier may, if he pleases, call it a postulated principle. I prefer the term universal and have no space to discuss the implications of the two terms. The form in which I put it, that of the major premise of a particular syllogism, is hardly satisfactory. It is like the twelfth axiom of the old-fashioned Euclid, too complicated to be axiomatic. Nevertheless I have no hesitation in saying that this "monstrosity of triple authorship" is a statement of the general truth unconsciously assumed without which the *a fortiori* would be invalid. The objection is æsthetic rather than logical. "All things greater than a given thing are greater than those which it is greater than" is simpler, but still unduly complicated. The universal we are in search of is a clear statement of the fact that size is a continuous and comparable relation. The difficulty of adequately stating it is precisely similar to the difficulty, which I have in this journal attempted to solve, of finding a satisfactory axiom of parallels. What is more important than the precise form of expression is the realisation of the truth that it is the unconscious assumption of this universal which makes the argument *a fortiori* valid and convincing.

¹ Dr. Mercier says there are three kinds of reasoning, empirical reasoning or induction, deduction, and analogy. I cannot here discuss the third item, analogy.

The necessity of finding the universal is shown still more clearly by the manner in which Dr. Mercier has fallen into a booby trap and informed the readers of *MIND* that the correct deduction from A is next to B, B is next to C,—is A is next but one to C. I do not know whether the inference is valid according to the *New Logic* but it is certainly wrong. The following is correct though I do not guarantee its completeness. In the first place the propositions are ambiguous. If *next* be interpreted *nearest*, the inference does not follow for, though B is nearest to C, there may be any number of objects further from C than B but nearer to C than A. If, on the other hand, *next* means *juxtaposition* to the relation between A and C is only partially determined. A *may* be next to C as in the case of three spheres arranged in a triangle. The only true inference is—A is not further from C than the greatest linear dimension of B. The example is similar to the indeterminate one A is 1,000 miles from B, B is 1,000 miles from C. Whether, by verbal juggling, Dr. Mercier could obtain the conclusion A is not more than 2,000 miles from C, I do not know. Even so it would be necessary to inform him that this deduction assumes, not only that A, B and C are mathematical points, but, euclidean space. In the space of Riemann the conclusion would be incomplete and in that of Lobatschewsky it would not be true. Dr. Mercier, to obtain his conclusion validly requires in addition to the premises A is next to B, B is next to C the assumption that A, B, and C are members of a linear series, a premise certainly not implicit in the other two.

These examples well illustrate the truth that a universal, expressed or implied, is necessary for a valid deduction. From the premises A has a specified relation to B, B has the same relation to C, no conclusion can be drawn. To obtain any conclusion what is required is a universal stating the implication of the relation in question. The *a fortiori* is valid only because the universal in question implies that the same relation holds between A and C.

In conclusion it will be well to say a word or two concerning Dr. Mercier's accusation of bias. I refer to passages like the following:—

"Mr. Shelton, I am delighted to find, is perfectly willing to admit the existence of other logical forms than the syllogism, but . . . he is not willing to admit that I have discovered or described them. Willing to wound, but yet afraid to strike, he does not deny that I have done so, but he will not admit it."

The suggestion is probably due to the fact that I, who am not a professional logician, have intervened in the discussion at all. The reason for intervention I have already explained. It was due to the attack on Dr. Bosanquet. I regarded the attack, not merely as banter and self-advertisement, but as a serious statement that Dr. Bosanquet's logic was a piece of sham learning which served

on purpose save that of bolstering up the official position of professional logicians and would-be philosophers. My own article in the *Quarterly Review* indicates that I do not attach great value to Dr. Bosanquet's treatment, but Dr. Mercier's attack did not seem to me either fair or called for. I should hesitate to stigmatise as spoof the work of an able man who was doing his best to summarise and systematise the state of thought and discussion of the time. Such a description, I thought, could only rightfully be applied to a deliberate ignoring of new and important ideas. The reason for thinking that this did not apply to Dr. Bosanquet I stated in the previous discussion (*MIND*, No. 91, p. 402). When I published a short paper expressing dissent from his treatment of methodology, he did not keep silent and hide himself behind an established reputation, but came out into the open and discussed the points at issue. This, from my experience of prominent men, both philosophers and scientists, especially the latter, seemed to me exceptional. I have always found that those whose treatment of any problem, scientific or philosophic, is criticised will use the weapon of silence as long as they can, and their subsequent contributions to the subject, attempting to ignore the points made against them or to wriggle round them, can often very correctly be described as spoof. Indeed, even Dr. Bosanquet himself has lapses. In the current number of the *Proceedings of the Aristotelian Society* (1914-1915) I find a paper by him entitled "Science and Philosophy." I think, perhaps, the point on that subject which transcends all others in importance is whether or no philosophy, or its branch methodology, should have any practical bearing on the wider principles of scientific thought. I have very strongly urged that such is the main function of an important branch of philosophy. In the preceding issue (1913-1914) of the same publication I argued the matter at length with practical illustrations. I have even, on that matter, the agreement of Dr. Mercier. It seemed to me therefore somewhat surprising that Dr. Bosanquet, whose qualifications to speak authoritatively on the subject of science are not very evident, should have thought that he was adding to the discussion on the relation between science and philosophy, while ignoring the one point involved therein of any general interest.

It is as well, so far as space permits, for me to be thoroughly candid in stating how Dr. Mercier's work affects me. The only incident which would bias me against Dr. Mercier's work occurred after I intervened in this discussion. It happens (possibly Dr. Mercier did not know, but Mr. Carveth Read could have informed him) that the essential and central point of much of the work that I have been putting forward is the direct bearing of philosophy, and especially of that branch of logical theory generally known as methodology, on the practical problems of present-day science. I have illustrated that thesis, in season and out of season, continually and systematically, by contributions to the advancement of science

more solid than serio-comic dissertations on sour milk. In the February number of the *Nineteenth Century* Dr. Mercier published an article which contained, though an unconscious caricature, substantially the same idea. When I suggested plagiarism, he stated that the idea was in the *New Logic*. It would not matter if it were, as the publication of the central idea and some very important examples dates back to 1910.¹ As a matter of fact, though the *New Logic* runs to more than 400 pages, that point of view is not at all prominent in it, indeed is scarcely there at all. I do not mean that there is not an expression of opinion that logic might be useful in scientific work or that one or two particular views current in the scientific world are illogical, I mean that there is no systematic attempt, or indication or promise of a systematic attempt, to show a definite practical relation between logical and philosophical theory and the problems of practical science. I have to be particularly emphatic that that idea is *not* to be put to the credit of the *New Logic*.

On the more purely logical side it is nearly a matter of indifference to me whether or no Dr. Mercier's logic is what it claims to be. Indeed, it would help my case better if it were. I do not compete with Dr. Mercier in the extravagance of the claim I put forward. I do not talk of the effulgence of the new methodology. But I do claim to have put forward a definite and important contribution to the advancement of knowledge. I have also sometimes asserted that the difficulties I have encountered in obtaining a hearing, the lack of interest, clear discussion, intelligible criticism, fair treatment and reasonable appreciation on the part of the academic world, is greatly to the discredit both of men of science and of philosophers. If, therefore, Dr. Mercier had done good work in pure logic, and, notwithstanding the financial stability and other advantages implied by a recognised position in another branch of knowledge, had encountered similar difficulties, he would be a valuable ally. On the other hand, if the claims Dr. Mercier has made are unfounded and absurd, the fact that Dr. Mercier makes such extravagant claims without reasonable ground can easily be used to discredit a more modest but genuine claim. In that case my view of Dr. Mercier would be similar to that which he, supposing he had made a valuable discovery in medicine which his colleagues would not notice or accept, would hold of a noisy quack who had extensively advertised something apparently similar but valueless. In which category Dr. Mercier is to be classed is not a question on which I can express an opinion incidentally in a discussion such as this. I have no personal reason for deciding one way or the other

¹ See particularly articles in the *Journal of Philosophy*, the *New Quarterly*, the *Journal of Geology and Knowledge* during the years 1909, 1910. See also *Oxford and Cambridge Review*, January 1912.

apart from an objective opinion on the merits of his book. But I may be allowed to repeat the opinion that, after he has made such extraordinary claims, the matter should be thoroughly and critically investigated.

H. S. SHELTON.

MR. STRACHEY'S DEFENCE OF MR. RUSSELL'S THEORY.¹

MR. STRACHEY'S article does not appear to me to remove any of the difficulties in Mr. Russell's position, which I have in the main understood in the sense in which Mr. Strachey himself interprets it.

(1) Mr. Russell's two main principles are the theory of private and independent sense-data, and his general theory of knowledge, and it is therefore unfortunate that Mr. Strachey has omitted to consider the difficulties which arise here from (a) Mr. Russell's ambiguous application of his own clear and necessary distinction between sense-data and sensations,² and (b) the fallacy which (I still think) lies in his definition of knowledge by description,³ and which, unless it is removed, tends to vitiate seriously the later conclusions drawn from this definition; but until we are given a clear and final deliverance on these two points, any criticism must obviously be largely tentative.

(2) But it has always appeared to me that Mr. Russell's distinction between "Knowledge by acquaintance" and "Knowledge by description," to which Mr. Strachey calls attention (p. 16) is radically wrong, and one which, although certainly valuable when we are dealing loosely with some of the broader aspects of the phenomena of knowledge, has no foundation in strict theory, to which, of course, we must come in the end; its only justification is some measure of harmony with conventional usage and opinion. There are not, that is, two entirely different kinds or modes of knowledge, one of which is applicable to facts or truths, and the other to (*e.g.*) sense-data or emotions; one involving, the other excluding, judgment. The essential character of knowledge, on the contrary, is continuously the same throughout the whole course of its development, although that development exhibits many highly contrasted phases; knowledge, *i.e.*, is always a body of judgments,⁴ which tend to find their expression in propositions, and until a judgment, however simple or even rudimentary, is formed, no content before consciousness can, in the true sense of the word, be said to be *known*—to be an object of *knowledge*. Sense-data or emotions (to keep to Mr. Strachey's examples), therefore,

¹ MIND, Jan. 15, pp. 16-28.

² *Ibid.*, Vol. XXIII., p. 251.

³ *Ibid.*, p. 253.

⁴ If not, preferably, a single continuous judgment.

merely and purely in themselves and apart from some ideal¹ content, can never be *known*—in the strict sense of that word, whatever other character our consciousness of them, again purely in themselves, may be found to have. And therefore it appears to me that of the two senses in which Mr. Strachey (p. 16) asserts that we may use “know,” his first sense only can properly be maintained, the second, when it is real knowledge at all, being merely an imperfectly distinguished and incompletely analysed phase of the first; but there is not space, even were it necessary, to cite the arguments necessary to establish this position, which indeed, in my opinion, is made patent by the slightest introspection.

If Mr. Strachey can succeed (in the first instance) in isolating before his consciousness any sense-datum, emotion, or other content, or any group of these purely as such, and devoid of any ideal elements, he will, I think, find it impossible to say—“I know this sense-datum,” in the proper sense of the word “know,” and to stop there; he must go on, if it be knowledge that he has, to form a judgment, however rudimentary, involving some additional and ideal elements—if it be only that the content exists, if only for himself.

I am not saying, of course, that our consciousness of such contents *must* take the form of knowledge, but only that as soon as it does so it comes at once under Mr. Strachey's first sense of “know” and we “know that . . .”. It is impossible to know sense-data or emotions, and at the same time to exclude absolutely all judgment, as in Mr. Strachey's second sense of knowing, simply because the mind, in all its proper knowing activities, inevitably and invariably falls into some judgment process.

And with this characteristic unity of knowledge there goes the corresponding unity of that reality which knowledge always apprehends—for knowledge can be (in the end) of reality only, and of nothing else, however incomplete that knowledge may be. There are no gaps, *i.e.*, in knowable reality like the one which Mr. Russell, *e.g.*, postulates² between sense-data and the “real” physical world; but this is another fundamental point whose discussion lack of space forbids.

(3) I may, however, mention a few incidental points concerning judgment and propositions on which I cannot follow Mr. Strachey; evidently he distinguishes between proposition and judgment, for we find (p. 17)—“When I make a judgment, my mind is in a certain relation to a proposition, and Mr. Russell holds that I cannot make the judgment unless I understand the proposition”. It would be surprising if Mr. Russell really holds the view here at-

¹ Of course, in the logical sense.

² For there is, I think, no proof, in Mr. Russell's works, of this principle. “It so happens,” says Mr. Strachey airily (p. 20).

tributed to him; for surely a judgment is possible without our making (not to speak of understanding) a proposition? In normal social life of course, judgments invariably lead up to propositions; but are these also involved in the judgments of animal and deaf-mute intelligence, or (at the other extreme of the scale), of genius, poetic insight, and the divine omniscience? So far then is it from being true, as Mr. Strachey says, that "I cannot make the judgment unless I understand the proposition," that on the contrary no proposition is at all possible, not to say intelligible, until a judgment has been formed as its necessary precedent basis and root.

If then we thus distinguish judgment from proposition, I cannot concur in Mr. Strachey's view (p. 18) that "the sense datum is a constituent of the *proposition*," and (p. 20) "Concepts are the constituents of the *proposition*". Should we not rather say "constituents of the judgment"¹—the proper constituents of the proposition being the corresponding terms?

Then Mr. Strachey further holds, regarding knowing what words mean, that "This knowledge must be acquaintance" (p. 18)—of course in Mr. Russell's sense of the term. Let us see what follows from this view. It seems plain, from the whole of Section I., that "what words mean" (since this is known by acquaintance) must be "something other than a fact or a truth," and must further involve "no judgment or beliefs". Now to apply this view to Mr. Strachey's own example (p. 19)—"Bismarck was an astute diplomatist". Here, says Mr. Strachey, knowledge what the word "Bismarck" means, "must be acquaintance"; but it cannot mean the particular Bismarck, for in that case "no one but Bismarck himself can understand" the proposition; the word then must have other meanings—"first chancellor," "chief adviser," etc.; and therefore knowledge "what the word means," when these are its meanings, must be acquaintance "of the kind we have of feelings and sense-data" (p. 17)—must involve "no judgment or belief"! Happy Russellians, who enjoy such a logical Paradise!

(4) With regard to Mr. Russell's general theory of *a priori* knowledge, I think Mr. Strachey altogether misses my point. Even if we admit "that *a priori* knowledge is never concerned with things that we can experience" (p. 26), still Mr. Strachey brings forward nothing which helps me to see that Mr. Russell successfully explains how we ever obtain *a priori* knowledge of anything else either. Indeed, I am not sure that Mr. Russell regards any explanation whatever as possible or necessary;—"it must be taken as a fact," he asserts;² and his whole philosophical

treatment of *a priori* knowledge is the more curious, coming from so eminent a worker in a field into which this knowledge enters so largely; and what Mr. Strachey calls "my version of Mr. Russell's

¹ That is as a result, not a process, here.

² *Problems*, pp. 164-165.

theory" is only what appears to me to follow logically from all Mr. Russell's arguments on the point, in support of which, however, Mr. Strachey himself adduces nothing additional.

(5) Finally, as to space, physical and private, I may again accept Mr. Russell's meaning to be that given by Mr. Strachey (p. 24) "that we can know the relations between physical space and private spaces . . ."¹

But my difficulties still remain. What is the character of these relations? If they are not spatial (and not temporal) what other character have they? And if they are spatial, how do we know them? Obviously, not by acquaintance, for we do not know one of the terms (physical space) by acquaintance, between which these relations subsist. The only mode of knowing them, therefore, is by description; and then it at once follows, in conformity with the whole of Mr. Strachey's first section, that either

(a) The relations in question are "in some relation to something, or have some property" (p. 16)—or

(b) These relations are "facts or truths"; and if so, which?—or

(c) Our knowing these relations "amounts only to a knowledge of truths about" them.

And these alternatives appear to me either to involve circular arguments, or to be hopelessly vague, especially when we consider the *a priori* nature of much of geometry.

In conclusion, it would be interesting to know if Mr. Russell would endorse the limitations of his system implied in Mr. Strachey's "blind man" illustration (p. 19), which again raises the question whether, if this be all we may expect from philosophy in general (as distinct from any special theory), the game is worth the candle? Is philosophy foredoomed never to attain a clear and true, even if limited, vision of the real whole?

J. E. TURNER.

¹ Mr. Strachey appears to imply that Mr. Russell does not mean that "we can know the relations between parts of physical space"—an important admission, if adhered to.

THE A FORTIORI ARGUMENT.

I HAVE no wish to intervene in the general controversy¹ between Mr. Shelton and Dr. Mercier on the value of Formal Logic, but only to add a word on one particular question which the latter has raised in his postscript,² viz., the nature of a *fortiori* reasoning. Here Dr. Mercier's position would be considerably strengthened if he would give some further, or clearer, explanation than I have as yet been able to gather from him, what he himself understands the principle of such reasoning to be.

Take the arguments:—

(1) A is greater than B, B is greater than C, \therefore A is greater than C;

and (2) A is next to B, B is next to C, \therefore A is next to C;³

or (3) A cheats B, B cheats C, \therefore A cheats C.⁴

What is the principle that discriminates (1), which is valid, from (2) and (3), which are invalid? To those who, like Mr. Shelton, hold that the *a fortiori* argument can be expressed syllogistically, a valid inference of this kind turns upon a nexus of relations which is seen to be universal, and therefore to be true in the particular case of A, B and C: and the distinction of such valid reasonings from those which are similar in form but invalid is not difficult. We see directly (*e.g.*) that relations of the kind specified between A and B, and between B and C, necessarily involve, in the case of (1) *supra*, a corresponding relation between A and C, and that in the case of (2) and (3) they do not.

This apparently does not satisfy Dr. Mercier. In his *New Logic* (p. 307), he holds that "the conclusion can be reached, and is in fact reached, from the postulate alone, without praying in aid a *principium* of such gigantic dimensions, for which the postulate gives no warrant whatever". The criticism raises two points: (a) that the major or universal premise (the *principium*) is not derived from the postulate ('A is greater than B, and B than C'); (b) that it is unnecessary to the inference.

On the first point it is perhaps enough to say that the major premise of a syllogism is not usually 'warranted' by the minor, or derived from it.

¹ MIND, N.S., Nos. 90, 93.

² *Ibid.*, No. 92, p. 567.

³ Mr. Shelton's instance, MIND, N.S., No. 93, p. 78.

⁴ Dr. Mercier's instance, *New Logic*, p. 309.

The second point is of course the crux. If the canon above suggested be rejected, what other is proposed in its place? "The rule," says Dr. Mercier (*ib.*, p. 308), "is that any term may be replaced by any other term . . . that for the purpose of the argument is implied in it; and the words italicised make all the difference;" i.e. (presumably) the difference between the valid and invalid arguments is this, that in the former the third term may for the purpose of the argument be substituted for the second, while in the latter it may not; and this difference is made to depend on some difference in 'the purpose of the argument' in the two cases, legitimising this substitution in the one case and not in the other. Naturally therefore we ask, 'What is the difference between the "purposes" of the two arguments?' Unfortunately (unless I have overlooked the passage), Dr. Mercier does not tell us *totidem verbis*. Instead, he goes on to tell us what the 'purpose of the argument' is only in the case where the inference is valid, and leaves us to infer, if we can, what it may be, and how it may differ, in the other cases. In the case of the valid inference, "What," Dr. Mercier asks, "is the purpose of the argument? It is not to establish a relation between A and B, or between B and C, for those relations are already given. It is to find what else than B is greater than C; what else than B, A exceeds in magnitude; or what the relation is between A and C" (*ib.*, p. 308).

Now for the other case, *viz.*, the invalid argument: "If A cheats B and B cheats C, it is equally clear that C is not, for the purpose of the argument implied in B" (*ib.*, p. 309). It is, I should reply, indeed clear that the inference 'A cheats C' does not follow: but the problem is to know how that *non sequitur* is dependent on any difference in 'the purpose of the argument,' and Dr. Mercier does not (as far as I have been able to find) reveal this.

If he does not, one may suspect the reason to be that he cannot. Whether your inference about certain relations follows or does not follow from the premises cannot depend upon your object in attempting to draw it, or in starting the inquiry. It depends upon a difference between the relations themselves and their nexus or implication with one another. Let us suppose the contrary, *viz.*, that the question 'valid or invalid' *does* depend on the 'purpose of the argument,' and not on some essential difference between the kinds of relation referred to: then it would seem that, in order to distinguish valid from invalid, we are entitled to neglect the difference between the kinds of relation, and to look only to the purpose, assured that in any argument whose purpose is parallel to that of an argument which we already know to be valid, it will be valid to draw a parallel conclusion. But this expectation, of course, breaks down at once. In the case of the valid argument above instanced, our 'purpose' was (according to Dr. Mercier), knowing that A is greater than B and B than C, "to find what else than B is greater than A; what else than B, A exceeds in

magnitude; or what the relation is between A and C". But surely, knowing that A has cheated B, and B has cheated C, we might set out to inquire with precisely parallel 'purpose' (or more properly speaking 'purposes'), *viz.* to find who else than B has cheated C; who else than B has been cheated by A; or what the relation is between A and C: or again, knowing that A is next to B, and B to C, we might desire to find what else than B is next to C; to what else than B, A is next; and what the relation is between A and C. Nevertheless, however parallel the purposes of our arguments, and however parallel the premises, the fact remains that the latter in the one case yield the conclusion 'A is greater than C,' and in the other cases obdurately refuse to yield the parallel conclusions 'A has cheated C' or 'A is next to C'. Now how can this divergence be made to depend on a 'purpose' which is strictly parallel? In the absence of further enlightenment from Dr. Mercier, must we not look for its explanation to the one feature in which the two cases diverge, *viz.* the kinds of relation involved, which are clearly relations of magnitude in the one case, of honest dealing in another and of proximity in a third?

If so, however, then the hinge of the valid argument is not its purpose, but a nexus of relations which is necessary—therefore universal: and the exhibition of the argument syllogistically is an attempt to avow candidly the part which our awareness of that nexus plays in it, not to complicate the reasoning by unnecessarily 'praying in aid a *principium*' of 'gigantic dimensions'.

That attempt may perhaps be open to criticism on other grounds into which I do not here enter. But in any case Dr. Mercier's readers have a right to ask some alternative explanation of the argument in question more satisfactory than any which (as far as I can find) he has yet given. Either he can give this or he cannot and should retract. Unless he adopts one course or the other, his readers will no doubt form their own opinions as to whether the charge of 'spoofing the public' lies nearer to Mr. Shelton and his friends or to Dr. Mercier.

W. A. PICKARD-CAMBRIDGE.

THE INDETERMINATION OF MEANINGS.

I SHOULD hardly venture to intervene in the interesting little dispute between Mr. Sidgwick and Captain Knox,¹ were it not that the latter is just now too busy serving his country to reply, and that I not only share his admiration for Mr. Sidgwick's epoch-making work in logic, and agreed with his criticism, but also feel competent to continue a discussion which, though it appears to turn on a small point of phraseology, is by no means unimportant. For it brings out very clearly how necessary it is for logicians always to state quite explicitly whether they are trying to follow the course of actual reasoning or to reflect on it *ex post facto*, and how impossible it is to make one doctrine do for both standpoints, as has hitherto been done.

Now in this case we are all agreed that logical terms contemplated *per se* have a certain indeterminateness which is inseparable from their use as instruments for the conveying of an actual thought. No term could have any use worth mentioning if it could only be used once and never again. It must therefore be transferable from case to case; and as a word its (dictionary-) meaning must be sufficiently *elastic* to bear such transfers. A certain elasticity and variability of meaning then, being what fits a term for use in a plurality of contexts, is a *virtue* in a word, and is just as essential to its usefulness as is the definiteness which enables it to convey meaning at all. But it has the defects of its qualities. If it is to be capable of conveying sensibly different meanings on different occasions, we cannot guard in advance against the possibility that on some future occasion the meaning if it is intended to convey is *not* that in which it is understood. This is what logicians have meant by calling it an 'ambiguous' term, though it is clear that such potential ambiguity can be, and should be, distinguished from real ambiguity and actual failure to convey the meaning intended.

But whether this 'plurality of senses,'² of which admittedly terms are and must be capable, be called a 'defect' or not—and on this question I incline rather to Captain Knox than to Mr. Sidgwick—it has nothing to do with the problem of avoiding or detecting *real ambiguity*, alike whether it is considered before or after the judgment. A careful and honest reasoner always considers, both

¹ Cf. Nos. 93 and 95.

² I have suggested this name for it, cf. *Formal Logic*, chap. ii., § 8.

before he judges, whether his terms are likely to convey his meaning, and whether they *have* conveyed it, after he has judged. And it would appear to be true, as Mr. Sidgwick points out, that before judging he should be alive to the necessary indeterminateness of his terms, and that he may then regard it as a 'defect'. It is certainly one of the risks he takes in judging, one of the things that may lead to his failure. But it does not seem to me to follow that we should therefore complain "of the judgment in general". Mr. Sidgwick will agree that we should not complain of judgment in general merely because it takes risks. For he has himself taught all who have understood him at all that without risk of error there is no chance of truth. And what he is here complaining of is not an incident in judgment in general (*i.e.* in *all* judgments), but in the *form* of judgment. For *ex hypothesi* the actual judgment is not yet formulated, and all that as yet the reasoner need feel is that, like all instruments, his own, the significant term, has limitations. But need he resent this, unless he unreasonably expects it to work miracles?

Now suppose that he takes his unavoidable risk, and performs his act of judgment. He then either succeeds in conveying his meaning by means of the words of his choice, or he does not. If he does, the former indeterminateness of his terms has become irrelevant; it has disappeared from the actual judgment and no longer exists for the purpose in hand: his words have shown themselves capable of performing their function and have conveyed his meaning. He has therefore no reason to complain of them, and the more simply and elliptically they have succeeded, the more economically have they done their work, the greater is his triumph and the more he can pride himself on his skill in the use of language. If, on the other hand, he has failed, it does not follow that he should blame anything so general and remote as the elasticity of terms. It may be that his hearers were too stupid or ignorant, or that he has himself to blame, because he chose the wrong words for his purpose.

Such then being the situation when fully analysed, ought we to condemn human language with epithets like 'vague' and 'defective'? No doubt both terms can be justified; but the 'defects' indicated are so akin to and inseparable from excellences, that it seems better to avoid them. The more so as they may easily produce confusion by looking too much like a concession to an intellectualist 'logic,' which has not the slightest interest in human thinking and no regard for its actual procedure.

F. C. S. SCHILLER.

VI.—CRITICAL NOTICES.

Wissenschaft und Philosophie : ihr Wesen und ihr Verhältnis.
Von Dr. PAUL HÄBERLIN, Privat-Dozent an der Universität
zu Basel. Zweiter Band : Philosophie. Basel : Kober C. F.
Spittler's Nachfolger, 1912. Pp. 426. Unbound, 7.50 fr.;
bound, 10 fr.

THE first volume of this work was reviewed by me in the pages of *MIND* some time ago (vol. xxii., pp. 260-268). On the whole, I can safely say that the second volume not only maintains but surpasses the interest of its predecessor.

To begin with a correction, it turns out that, along with other critics, I was mistaken in the expectation that Dr. Häberlin intended to give us in this volume a piece of constructive 'Weltanschauung'. He now makes clear that from the first he had set himself only the humbler task of inquiring whether the demand of philosophical natures for a 'Weltanschauung' can be satisfied at all; and, if so, what are the most general characters of this satisfaction and how it is to be attained.

The first volume had analysed 'science,' or the 'theoretical' form of experience. The second begins with an analysis of 'practical' experience, 'Handlung' and 'Wertung' being the chief topics, and then goes on to show how both modes of experience are combined and transcended in *metaphysics*, or the synthetic construction of a 'Weltanschauung'.

Dr. Häberlin's analysis of 'Handlung' covers, in effect, the same ground as Mr. Bradley's articles on 'Volition,' familiar to readers of *MIND*. But whereas for Mr. Bradley the dynamics, so to speak, of the will-process depend on the contrast between 'existence' and 'idea,' and the tendency of the idea to realise itself—the theory taking its cue from ideo-motor action—Dr. Häberlin lays the stress on the play of feelings, their tensions, conflicts, and mutual reinforcements. His analysis of this side of will-action is exceedingly minute, and the complication of feelings which he traces even in a 'gewöhnliche Handlung,' surprising. The main points of the analysis—taking volition as a psychical series or process—are these. The starting-point is a complex experience, partly theoretical, partly practical, *viz.*, a situation apprehended, and a 'negative feeling' towards it, *i.e.*, a feeling of dissatisfaction, disapproval, aversion, which supplies the dynamic

element or 'Ausgangs-motiv' (pp. 9, 10). The instability of this experience gives rise, at the next stage, to an idea of an end ('Phantasie-Vorstellung eines Endes') prefiguring an alteration in the given situation such as to carry with it the promise of a 'positive feeling,' *i.e.*, a feeling of satisfaction or approval, implying a 'positive valuation'. This feeling, so far, is present only in idea ('vorgestellt'): the agent thinks of himself as satisfied by the realisation of the end. The end, however, must not be an object of 'mere' imagination, qualified as unreal or unrealisable. It must be definitely thought of as a 'reality' pressing and demanding to replace the given, a reality which can be, will be, ought to be actual, a reality before which the given is on the very point of yielding.

With the idea of an end we get a great complication of feelings. In the first place, the end, thought of in anticipation as real, as capable of being realised, and as possessing positive value, gives rise at once to an actual feeling of positive quality. This 'Vorfreude' (p. 43) is essential. Without it we should not act, for mere discontent with the given does not necessarily move us to action. At the same time, *quâ* not yet realised, the end inspires also a negative feeling. The delay, the divorce of the end from existence, is unpleasant. But yet again, in so far as we think of the end as capable of realisation and about to be realised, there results a further positive feeling. Hence there are always 'drei Begleitgefühle der Zielphantasie' (p. 15), two positive, one negative. All three are necessary if the will-action is to be completed. If there were no positive feeling, born of the anticipation of satisfaction, there would be no 'wish' for the end; if there were no 'Hoffungsgefühl,' born of the thought of the end as realisable, we should be too discouraged to act; if there were no dissatisfaction with the end as not yet realised, it would be nothing more than a mere play of fancy. The situation may be further complicated when to the thought of the end (Zielphantasie) there is added the thought of myself as realising the end (Ausführungsphantasie), with its full train of varying feelings. And even this does not exhaust the analysis. Complicated as these feelings are, they become infinitely more complicated when between the thought of the end and the given situation there is interposed the thought of a chain of means, which carry positive or negative valuations in their own character, as well as from the point of view of their practicability, apart altogether from the positive value which irradiates upon them from the end, as desired, and the negative feeling similarly extending to them from the end as not yet realised. In the tension and stress of all these feelings, some inhibitory in effect, others impelling, there must be a *plus* of forward-driving feeling. The presence of such a positive balance constitutes 'willing' (p. 21). Given this, there follows the second stage of the process of action, *viz.*, the transition from intention (thought

of end) to realisation. Dr. Häberlin fairly and squarely acknowledges this transition to be incomprehensible (p. 23). Indeed, one of the chief difficulties of the introspective analysis of the will-experience lies just here. It is agreed that the process is from 'existence' to 'idea of an end,' and from the idea to the 'realisation' of the end in a transformed existence. One school of Psychologists, to which both Mr. Bradley and Dr. Häberlin belong, treats the process 'phenomenologically' as a sequence of happenings to be analysed and described as exhaustively as possible in its stages and components. The other school—we may instance William James—regards this as Hamlet without the Prince of Denmark. It wants to know why the transition from idea to end takes place, and supplies the dynamic force in the shape of a unique, unanalysable will-element, variously named attention, consent, fiat, desire, or simply will.

Dr. Häberlin, then, proceeding descriptively, specifies as the next stage at this point of the process a peculiar muscular sensation of tension ('Spannung'): 'Es juckt uns in den entsprechenden Muskelpartien' (p. 23). He refers, I take it, to sensations of incipient movement—the impatience to 'be up and doing' which, in its extremer forms, appears in men and animals as a diffuse, aimless, bodily restlessness. But the chief interest of Dr. Häberlin's account lies in the continuation of the minute analysis of shades of feeling for this, the execution-stage, of volition. Whatever our anticipations in the planning stage may have been concerning the feelings which we should experience in realising means and end—there are now fresh feelings, positive or negative, accompanying the actual movements and tending to facilitate or inhibit the progress of action. Again, these feelings, in all possible varieties, may attach both to the kinæsthetic sensations as such and to the outward observation of the movement, *e.g.* by the eye. Further, these feelings may conflict with one another. For example, a movement may be kinæsthetically pleasant, but visually ugly and therefore unpleasant. Finally, as realisation proceeds, there is a relaxation of tension, in itself always positive in feeling-tone, though that tone may be swamped in the total complex of feelings. Throughout, the feelings accompanying the stage of realisation continue and absorb, or cancel, or conflict with, the feelings of the earlier stages, in ways too manifold and complicated to be described and classified in detail.

Dr. Häberlin next passes on to deal with a number of troublesome cases, which we are, on the one hand, tempted to treat as 'Handlungen' but to which essential characteristics, as measured by the above account, are lacking. Such are all kinds of 'Fehlhandlungen' (p. 50), in which either some other result is achieved than the one intended, or no result at all, the action being left incomplete, or in which the end, though attained, is no longer valued as it had been in anticipation. Again, there are all the actions which

differ from the normal type in that many elements remain unconscious or subconscious. Under this heading, the author discusses some of the phenomena to which Freud and his disciples have drawn attention, where repressed or forgotten purposes and desires manifest themselves in actions, either directly or in disguise. Lastly, there are the inward actions, voluntary recall, voluntary trains of thought, etc.

On Dr. Häberlin's argument up to this point, two comments may be made. (1) I do not wish to deny that large-scale volitions (if I may so call them), involving the construction and carrying out of a complicated plan with countless subsidiary details and adjustments—one might think, *e.g.*, of the initiation and realisation of some movement for social reform culminating in legislative measures—would exhibit all the complications of feelings which Dr. Häberlin traces. But when it comes to such simple actions as those which Dr. Häberlin instances, like the picking up of a sheet of paper from the floor (p. 6), I, for one, entirely fail to verify by introspective analysis the vast complication which the author's dissection exhibits. Of course, if this simple action were to be performed by me with philosophical pomp and solemnity, being expanded and drawn out like a telescope, very likely all these feelings would be generated in the course of it—*under these conditions*. But my point is just that, in the absence of these conditions, no such complications occur, and that to credit an action with all this apparatus of feelings when manifestly they are not there, is illegitimate. There is really no justification for ignoring the simplification, or shrinkage, of conscious detail as an action becomes secondarily automatic, such as most simple actions have become. I should not myself say that they cease to be 'voluntary,' because they run off mechanically, as it were, once the cue is given in the perception of the displeasing initial situation. But this is no reason for forcing on them, in the face of plain introspection, the complicated pattern of large-scale volitions. Of course, there is a difficulty of principle involved which goes very deep. When we have to deal with a vast range of facts, all lumped together under 'action' (with the implication that the action is 'voluntary'), and varying from actions so simple as to be all but completely automatic, and so brief as to be over 'in a flash,' to actions so complex as to require full attention to every detail, and so prolonged as to occupy days, months, or even years of life—it is next to impossible to lay down any 'norm' or 'standard' or 'essence' which shall really do justice to all. If we try for the barest minimum characteristics which would still allow us to identify a process as a 'volition,' we shall get far too poor a concept to fit the more complicated and significant volitions. But at least we can help ourselves by amplifying our pattern, however inconsistent in a sense that may be. But if we begin at the other end and make our pattern to fit

the most complicated volitions, then in working down the scale we shall be dropping 'essential characteristics' all along the line, and soon cease to have anything fairly recognisable as a volition at all. It is perhaps a choice between the devil and the deep sea—I prefer the deep sea, Dr. Häberlin has chosen the devil.

(2) Dr. Häberlin's device for escaping these difficulties is to appeal to the unconscious. If elements, which on the above analysis ought to be there, are not observable, they may be declared to be present unconsciously or subconsciously. When applied to simple volitions in order to make them conform to the pattern of complicated volitions, this seems to me pure mythology. Even when applied to the phenomena of forgetfulness and repression it is no more than a convenient fiction. Often, when an experience, which at the time of its occurrence remained 'unconscious' (if that can be called an 'experience'), seems to be subsequently remembered, I strongly suspect that the memory is spurious. At least, it would be a difficult matter to prove that we are dealing with what is genuinely memory. And even if we were, that does not explain what is meant by speaking of an experience, either at the moment of its occurrence, or during the interval, as 'unbewusst'. The term consciousness (*Bewusstsein*) is quite troublesome enough without being burdened with these additional puzzles. Some writers divide the 'mind' or 'soul' into an upper, 'conscious' stratum, and lower, 'subconscious' strata. Others effect the same division by talking of supraliminal and subliminal 'consciousness'. Some treat the subliminal or subconscious as the rubbish-heap of the mind, and the supraliminal as all-important, the home of rational thoughts and intelligent purposes. Others reverse this valuation, regarding the conscious stratum as the mere surface-play of marionettes, the strings being pulled by forces in the unconscious depths of the soul. Some regard consciousness as a mere condition or state, a bare 'awareness' as distinct from its 'content' or 'objects'. Others treat it as an agency capable of responding to an environment, selecting its own contents and manipulating them in various ways. To some consciousness is only a 'relation,' a peculiar grouping of the entities which are said to be 'in' it, or 'present to' it. To others consciousness is just its objects or contents; it is feelings, thoughts, volitions, meaning by these terms *what* is felt, thought, willed. In fact, the term is near becoming a nuisance in philosophy, for this is only a brief selection from the list of possible meanings and uses. And the net result, I submit, is that no definite meaning can be attached to the assertion that an experience exists or occurs un- or sub-consciously.

A comment may be permitted here on one of Dr. Häberlin's illustrations (pp. 62, 63) in support of the occurrence of 'nachweislich unbewusste Absichten' (p. 65). A friend of his had the habit of letting every match burn right out by turning it round and seizing

it, after a while, at the burnt-out end. Dr. Häberlin made a bet with him that he could not resist this habit for twenty-four hours, and, sure enough, he soon caught his friend, engrossed in conversation, letting a match burn out. The argument is that Dr. Häberlin could here infer from the outward action the operation of the unconscious purpose, and that the friend, when confronted with the burnt-out match, could recall his action. Now, in the first place, before we can accept the recollection as relevant, we ought to be told exactly what was recalled. He may well have recalled holding the match and watching it burn out; I doubt, whether he recalled an intention to do so. And only the latter was, *ex hypothesi*, unconscious. But, secondly and chiefly, the real point, surely, if we are to argue about unconscious intentions, is: What had become of the consciously formed intention to win the bet and check the habit? Was that repressed? or merely forgotten? And, in either case, in what sense, if any, was it unconscious? The hypothesis of unconscious mental processes becomes distinctly complicated when it has to provide, as here, for an unconscious conflict of two intentions, neither of which becomes conscious at the critical moment, but of which one is operative whilst the other is not.

I pass on to the section on valuation (pp. 93-152) which contains much that is interesting and much that is perplexing. Dr. Häberlin sets out with the principle that 'Every feeling is a valuation,' it being understood that what we value is always some object 'theoretically' apprehended, or, in other words, that feelings always accompany perceptions, thoughts, imaginations, etc., on which, thereby, they confer values. One could have wished that Dr. Häberlin had discussed at greater length both this identification of valuation and feeling, which, as he must know, is challenged by many thinkers, and the range and nature of what he calls feeling. He goes on at once to divide things valued into those which are good and those which are evil, according as the feeling is 'positive' or 'negative'. And under 'positive feeling' he lumps together terms as diverse as beautiful, agreeable, good, enjoyable. Some attempt at a classification of values and feelings, some discussion of the relation of 'feelings,' in the author's sense, to pleasure and pain on the one side, and the emotions on the other, would have been desirable. Instead he proceeds, first, to connect every valuation with an action: "positive value is possessed by everything which 'attracts' or 'pleases'". Alternatively, we may just as well say: by everything in so far as it is wished or willed" (p. 107). And, next, he distinguishes in all feelings modality, intensity, polarity and 'quality'. Modality is determined by the character of the object on which the feeling confers value, *e.g.*, we distinguish a feeling for colour from a feeling for sound or for logical elegance in argument. Differences of intensity are obvious. Polarity means that feelings always go in couples—a positive and

a negative confronting one another in every valuation. 'Quality' in a special technical sense, given to it here (p. 107) by the author, depends on whether we value an object for its own sake (intrinsic value) or for its relation to us (extrinsic value). Lastly, in every feeling, and therefore in every valuation and action, there are operative, in last analysis, two fundamental tendencies (Triebe) of polar character, but never separated, though one generally outweighs the other. These are (1) a tendency to identification with one's 'other,' to surrender oneself, merge oneself in, become one with, the other; and (2) a tendency to self-affirmation, to contrast oneself with, and oppose oneself to, the other; to assert oneself over him. It is the distinction of self and not-self in the language of feeling—'Einfühlung,' to use Lipps' term, *into* others, contrasted with insistence on self *against* others. For example, the former tendency requires other persons with whom we may identify ourselves, hence the various interpretations of the world in whole or in part as manifestation of a personality or personalities. The self-assertive tendency, on the other hand, accounts for the opposition of subject and object in knowledge; it is shown also wherever we appropriate things and use them as means for our ends. According as each tendency succeeds or is balked, we get the most fundamental values ('Ur-werte,' p. 116), positive and negative,—what Spinoza would have called the sthenic and asthenic emotions. The details in which the operations of these two tendencies are worked out are distinctly ingenious, but cannot be followed up here. The main point is that, towards any given object, we have a 'Doppeleinstellung,' inasmuch as both tendencies are inseparably operative, though differing in intensity and in success according to the nature of the object, and reacting on one another in constant oscillation or even conflict. Their joint manifestation Dr. Häberlin calls *Eros*, and indeed the experience of love, mingling ecstasy of self-surrender and jealous claim to exclusive possession, complete identification with the other and a supreme sense of self-expansion, is perhaps the best example of what the author means. After all even common experience bears witness to the paradox: *les extremes se touchent*.

I have space only for a brief summary of the last two chapters of the book, though they are full of interesting and striking thoughts. Having surveyed, in the first volume, the world of theory (science) and in the first chapter of this volume the world of practice (valuation), we are now in a position to see how a 'Weltanschauung' is possible. The first step is to reflect that both theory and practice involve an ideal, a norm, a truth. In theory, what is once true is always true. In valuation, what is once valuable is always valuable. There is, thus, a demand in both spheres for constancy and permanency. We strive after stability both in our scientific judgments concerning the nexus of objective facts, and in our feelings and valuations. In both we

want to be self-consistent, true to ourselves—and this in the most literal, which is here also the deepest, sense. In both cases it means surrender to, and identification with, an 'Ought': to think as we ought to think, to value as we ought to value. Thus only can we secure *in principle*, and in spite of failure and weakness in detail, that our truth, practical and theoretical, possesses consistency and universality. For the attainment of the practical norm, the best method, according to Dr. Häberlin, is identification with a personality greater than oneself, divine or human, historical or contemporary, individual or social. The corresponding method for the attainment of theoretical truth is to adopt that system of judgments which is most comprehensive and internally most coherent and stable.

But above scientific theory which gives us 'facts,' and feeling which gives us 'values,' stands metaphysics which gives us as a 'Weltanschauung' the union of both, the synthesis of fact and value. Such a synthesis can no longer be treated as a matter of 'knowledge' (Erkenntnis); it can be neither demonstrated nor disproved by an appeal to the methods or the evidence which establish conclusions in the sphere of science. But, on the other hand, it is not due to 'faith' either—least of all faith according to the schoolboy's definition of it as 'believing what you know isn't true'. In Dr. Häberlin's language metaphysics is an achievement of 'imagination' (Phantasie); it is the supreme insight which holds real and ideal in one, which reads the world of values into the world of facts. In detail, our versions of this vision may differ. We may treat facts as the symbol of values or we may treat values as the goal towards the realisation of which the fact-world strives, ideals thus being the inherent law of the world process, giving to it both driving-power and direction. The synthesis yields the paradox that, whilst every fact is a value, yet the value is also a norm which goes beyond the fact, as given and actual, so that, measured by it, the fact falls short. Yet what it falls short of is its own true nature, and from this point of view the world-process is a world-progress, and all our action is but one form of this realisation of a world of ideals which both inhere in facts and transcend them. To gain this systematic insight is the supreme aim of the philosophic passion. Such a system, when achieved, is, like a work of art, a product of the whole man, an expression of the concentrated striving of the whole 'philosophical personality,' the characteristic of which is just to experience any division and conflict in the universe as a disharmony within its own self, and thus to seek a solution in a vision of the whole as self-consistent and harmonious.

It is clear that the type of synthesis here sketched by Dr. Häberlin is akin to the vision of the Good of Plato's philosopher, to Aristotle's 'Theoria,' to Spinoza's *scientia intuitiva*, to the 'intuitive reason' of the German Idealists of the last century. It has

affinities to all these—perhaps most strikingly to Fichte—because it is offered only as a general outline, a pattern that could in detail be worked out in many ways. It is a view of philosophy with the principle of which I find myself wholly in sympathy. It sets metaphysics above both ‘science’ and ‘practice,’ and thus takes its stand against one-sided abstractions. Of the two, science is the more tempting and the more dangerous, for the cry that philosophy should become ‘scientific’ or else cease to vex serious-minded men, is abroad in the land. Hence Dr. Häberlin devotes a long section (pp. 288-351) to a demonstration—not novel in its details—that science cannot suffice to furnish a ‘Weltanschauung’ in the sense demanded.

One important question arises here with which Dr. Häberlin does not deal. In discussing it briefly in the form in which it has been debated by English thinkers, I ought to say that ‘theory’ is commonly used by them to cover both Dr. Häberlin’s ‘science’ and his ‘philosophical synthesis’ or ‘speculation’. Prof. Bosanquet has recently reminded the members of the Aristotelian Society that philosophy is the product of the whole man. Mr. Bradley, on the other hand, has lately pressed the question what this ‘philosophising with the whole of one’s nature’ exactly means, and how it is to be done. It is common ground, I suppose, that philosophy takes as its subject-matter the whole universe from every side of it which appears in human experience, and in that sense deals with the whole man. But the point at issue seems to be: Is philosophy *quâ* ‘theory’ or ‘speculation,’ an attitude of the whole man, satisfying him, so far as successful in its quest, on all sides of his nature, or is it itself but a particular interest, seeking satisfaction but in the one-sided direction of truth or self-consistent thinking, even though it be about the whole? Mr. Bradley and Prof. Bosanquet take the latter alternative, Dr. Häberlin’s view is, I think, committed to the former.

In conclusion, I should like to draw attention to Dr. Häberlin’s interesting discussion of the point that a philosophical synthesis is both through and through personal and individual, and yet in claim universal and absolute. Every genuine philosopher is bound to believe that only one philosophy is absolutely true, and that his own (p. 381 ff.). He must look upon himself as a mouthpiece of the Absolute. A more than merely human reality voices itself through him. Yet he will not expect ever to see his synthesis adopted by all men, nor can he shut his eyes to the fact, that other philosophers make the same claims for their divergent syntheses. But there cannot be divergent truths, all equally ‘absolute’. Dr. Häberlin’s various suggestions towards a solution of this ‘aporia,’ do not impress me as very successful. The best is that this very divergence, this very necessity which compels a thinker to uphold his synthesis and others theirs, ought to be a problem to him, and to be provided for in his synthesis. ‘He will be con-

vinced that there is meaning and purpose in the difference of personalities, and that the rival philosophies, notwithstanding their partial errors, have their significance *im Garzen der Kultur*' (p. 381). But if this suggestion be taken seriously, it surely makes untenable the view that every philosopher will and must claim absolute truth for his theory. True, it will be absolute to him in the sense that 'er kann nicht anders': it is the best he can do. True, again, that he will insist to the uttermost on the recognition of that aspect of the universe which it is given to him to voice. But if he is at all self-critical, he will surely confess that even the best he can get is not absolute, and that there must be genuine truth even in divergent philosophies, just because the Absolute utters itself through each.

R. F. ALFRED HOERNLÉ.

The Philosophy of Change, a Study of the Fundamental Principle of the Philosophy of Bergson. By H. WILDON CARR. Macmillan & Co. Pp. xii, 213. 6s. net.

STUDENTS of Bergson have learnt to expect much from Mr. Wildon Carr, and no disappointment awaits them in his latest volume. It is the outcome of lectures delivered in the University of London, and its contents are exactly described by its title,—a merit not as common as it should be.

The purpose of the book is firstly, to state the essential principle as clearly and concisely as possible, and secondly, to trace its application to the urgent problems of philosophy. The principle, of course, is the originality of change—that is to say, change does not happen to things, but things are derived from change, and the treatment is developed as follows.

The Method of Philosophy (chap. i).—Intuition is the method of philosophy, intellectual apprehension is the method of science. The too general idea that intuition spells vagueness and indefiniteness is wrong. A philosophy based on intuition neither despises nor opposes science, though it claims to penetrate where science is, "by a natural disability," unable to go. A free activity—if such a thing there be—can never be comprehended by science which is wholly deterministic. We feel that we are free, either, then, we are mistaken, or there is a fact which science cannot comprehend. But how can the feeling of freedom be proved to be illusory? only by saying that science is deterministic and therefore unable to comprehend it. But this determination may be only the intellectual picture of a reality which is free, the apparent rigidity may be contributed by the nature of the intellectual apprehension. In that case an intuitive philosophy must supplement science.

The attitude of the intuitive philosophy towards science is not antagonistic; it shares in the general tendency of philosophy and science in these times to draw closer together. Mr. Carr illustrates the tendency of physical science to take on a metaphysical character by an account of the Principle of Relativity in its bearing on the principle of the philosophy of change, *viz.*, that movement is original, and that "things are derived from movement, and movement is not a quality or character that things have added to themselves". Thus the latest science appears to demand a reconsideration of the notion that things are more original than movement.

The method of science and the method of philosophy are directly contrary. "The distinctive character of this philosophical method . . . is that it apprehends the whole before it apprehends the parts, and that it interprets the parts as a dissociation within the whole. Science, on the other hand, seeks to apprehend the ultimate elements which come together in the whole; it endeavours by more and more successful analysis to isolate the constituents and discover their affinities; it conceives the whole as an association of its parts" (p. 19).

The Doctrine of Intuition (chap. ii.).—The new way in philosophy reverses the direction of the old. It claims to be "the only method that makes possible a true metaphysic, that is, a knowledge of the source of the reality we study in physics" (p. 20). The attempt to comprehend reality by concepts is "radically vicious". But there is an intuition of reality. What, then, is it? It is the apprehension by the mind of reality directly as it is and not under the form of a perception or a conception, nor as idea or object of the reason, all of which are by contrast intellectual apprehension" (p. 21-22). Of intellectual processes perception stands nearer to intuition than does conception or reasoning. But perception is distinguished from intuition because it is limited to the present moment and is never pure, but is always mixed with conception and reasoning.

There is one object in the physical world which we know from within—our own body. In this knowledge, if anywhere, reality will be found free from the forms imposed upon it by intellectual apprehension. Here we find "a consciousness of the actual life we are living as we live it" (p. 27). This life is known to us as an indivisible change, "a movement experienced and not watched from without".

The supreme value of this intuition of the self by the self is that it shows why there are two ways in which everything can be apprehended.

Intuition is distinct from introspection. Intuition grasps life before, introspection only after it has broken up into "states that exclude one another". It is more reliable than intellect, because intellect gives us only immobile states and there is no way of

deriving movement from immobility. Our own life we know from the inside and from the outside. Our outside or intellectual knowledge is "the device by which we observe reality as an external sphere of activity" (p. 38).

Here the fundamental principle of the philosophy of change is reached. "In the consciousness of our own life as duration we have direct and immediate intuition of reality as original movement or change; and all those elements of experience which philosophers have tried to distinguish as original—sense data, *a priori* judgments, ideas—are derived from this movement; they are interruptions of it, or views of it, whose form is due to the selection that the intellectual nature of our activity exercises on it" (p. 39).

It remains to apply the principle to the dark places of philosophy.

The Mind and the Body (chap. iii.).—There are two reasons why it is impossible to believe that the brain produces the mind. (1) There is no common measure of mind and brain, and (2) the consciousness which arises in connexion with cerebral process is not consciousness of the cerebral process itself, but of something quite distinct. In other words, the physiological changes in the brain are causal and are complete without the intervention of consciousness, but the psychical series is not causally connected, and uses no physical energy; while "knowledge of what is outside the brain cannot be manufactured by a process inside the brain". Epiphenomenalism escapes the difficulty of the conversion of energy but affords no basis for knowledge. Nor does psychological idealism escape the problem of the relation of body and mind; if *esse is percipi*, the mind cannot produce the body nor the body the mind. Direct causation being rejected we are left with the alternatives, psycho-physical parallelism or interaction. The former Mr. Carr rejects, the latter he does not deny, but prefers to view the problem from the standpoint of action, and to regard the relation of mind and body as a union of solidarity, that is, "in action they are solidary—one cannot function, has no meaning, without the other" (p. 68).

Matter and Spirit (chap. iv.).—In living beings life manifests itself as "a continuous dispersing of activity from a centre". This central tension is the mind; the body is the interruption of the active dispersal. Mind is temporal and not spatial, it is experienced as duration; body is spatial and is experienced as extension. By perception we experience physical reality; by memory psychical reality.

Two questions arise in considering the relation of mind and body: (1) Why do perception and memory only happen when the brain is functioning? (2) What are the contributions of the body and mind respectively to memory and perception? The answer to the first question is that perception and memory are there in the interests of action which the body must carry out, and since the

brain controls muscular movement it appears to produce perception and memory as well. As to the second, the work of both body and mind is selection, the body selects perceptions, the mind memories. Memories are not preserved in the body but in the mind.

Why cannot we have a mind without a body? Because mind and body are solidary, and what affects the one affects the other. How do two orders of reality completely different unite? Probably "no answer can be given because the nature of the union may be unique".

Perception and Memory (chap. v.).—When the problem of perception is viewed from the standpoint of action the real question is seen to be *not* how we can know things outside our minds, but why do we perceive some things and not others? This selection which marks perception is due to the body which is organised to exclude whatever does not concern the individual actions. Our past experience is preserved in the unconscious; this is pure memory, but another form of memory "exists for us in habits which automatically repeat, act over again, our past" (p. 93). On this view, it follows that perception and memory are different in kind and not in degree; their end is not mere knowledge but action. What is perceived and what is remembered "do not come into existence when they come into consciousness" (p. 93). Consciousness is the convergence of life on action, it is an attitude of attention to life.

We find next an interesting comparison of Bergson's doctrine of perception with that of the new Realists, and with that of Prof. Alexander in particular, and an explanation of the sense in which the word "image" is used by Bergson—"the image is not something detached from the thing, something that resembles or represents it, or is a truthful copy of it, but the object or thing itself" (p. 106).

What are pleasure and pain? The body is at once an object and an instrument of perception. So every perception is an affection as well, because the instrument and the object are combined in the act. The whole problem is difficult, but, in general, pleasure goes with an undivided activity of the organism, pain marks an organism divided against itself.

The World of Actions (chap. vi.).—Are the outlines of things parts of reality, or are they due to the selective activity of our mind and body? The latter supposition is accepted, and in consequence the question arises, What, then, are things? The answer is, they are our eventual actions. This follows from two principles: (a) that reality is an original movement; (b) that consciousness is a tension or holding together of a flux. So things are "contractions of reality affected by memory".

The two problems of the nature of general ideas and of the laws of association of ideas are next considered from the point of view of action. The associationist problem is clearly turned upside

down; there is no longer an association of atomic constituents, but a dissociation of a continuous reality. "Things are a schematical or diagrammatical form of action." Time and space are also schematic, they are not qualities of reality, but means of apprehending it. The classical difficulties of infinite divisibility are discussed. Mr. Carr holds that the mathematical reconciliation of infinite divisibility and continuity does not touch the crucial point as to movement. "It is not the infinity of the divisibility, but the divisibility itself that is in question."

The ultimate choice is between things and movements. "If there are things—ultimate unalterable constituents of reality—there are no real movements; if there are real movements there are no things" (p. 144). The ground for declaring movement to be ultimate and things derived is found in the actual experience of change. Physical science stands all the same. But it cannot comprehend life, for "life is an order of reality that is original, matter an order that is derived" (p. 145).

The Vital Impulse (chap. vii.).—The problem of life is analogous to that of body and mind, for just as the brain *appears* to produce the mind, so matter *appears* to produce life. In reality also matter is the instrument of life, as the brain is that of the mind. Mechanism and vitalism both fail to account for the duration of living forms (*i.e.* the continuation of their past in their present) and the creation of new forms. The idea of duration and the idea of creation are the very essence of Bergson's doctrine of the vital impulse. This life-impulse is a tendency, one in its origin, which has split up and branched into divergent paths. One feature in evolution is specially examined—the relation and nature of instinct and intelligence, or the knowledge of life, and the knowledge of matter. It is maintained that instinct and intelligence are different in kind and cannot be derived one from the other.

The supreme boon which the philosophy of change offers is, in a word, freedom. "It is the final refutation of the Calvinism which has weighed so heavily on the human spirit" (p. 197).

God, Freedom, and Immortality (chap. viii.).—What has the new philosophy to say of the Ideas of Reason? "What is meant by saying that the ultimate reality of the universe is spiritual and not material?" "The reality of the universe is a soul that endures—perhaps we ought not to say that it is a soul but that it is soul or spirit" (p. 178). Of this spirit matter and space are but a present limit, lacking real duration.

Life is an ascending movement, and so the inverse of Carnot's law. But both the ascending movement which is life and the descending movement which is matter must be implicit in original reality; this is the principle of dichotomy.

Can a spiritual reality thus conceived satisfy our religious, moral and emotional needs? It neither excludes nor includes the belief in a personal God. But it excludes the attribution of timelessness

to God. "Instead of a God for whom all is already made, to whom all is given, we have a God who acts freely in an open universe" (p. 189).

Immortality is neither denied nor affirmed by this philosophy, though it denies a timeless and unchanging soul. On the other hand it gives in the doctrine of pure duration a hope that individual histories may be somehow preserved.

The Idea of a Reality Which Creates and Is Free (chap. ix.).—Free action is creation, and is the opposite of mechanical repetition. Two things distinguish vital and conscious action from action which is mechanical and unconscious. (1) The conditions of a conscious action cannot be repeated. (2) In conscious action there are new determinants of a non-mechanical kind, to wit, purposes. It is vain to look for freedom in science. The intellectual view is unavoidably rigid and deterministic. But there remains intuition. The free act is the manifestation of the whole personality. But of freedom there is nevertheless a condition—"this condition is an open universe". The notion of an Absolute which is perfect and complete is compared with that of an Absolute which is a life that endures.

"This metaphysical conception of life as the reality which creates and is free is actually moulded on experience. The philosophy of change is not therefore a logic-tight system, complete and perfect, from which we can take nothing and to which we can add nothing. It has nothing systematic about it. It has not an answer for every question. It is a method which distinguishes different problems and examines them separately. Philosophy, like physical science, is capable of infinite progress to ever greater perfection" (p. 213).

Such in bare outline, is the argument of *The Philosophy of Change*; I can only hope that my own private difficulties have not altogether prevented me from doing it justice. For I must needs suspect the adequacy of my exposition, since I am unable to accept Bergson's view of the intelligence, and so, lacking the initial vision, I no doubt fail to understand. And further it seems to me that the "unconscious" wilts visibly under the strain put upon it in the theory of memory. All the same, after reading nearly all the works put forth on the new philosophy for several years, I am sure that Mr. Carr's book stands almost, perhaps quite, alone in interest, lucidity and importance.

ARTHUR ROBINSON.

A Theory of Time and Space. By ALFRED A. ROBB. Cambridge University Press. Pp. vi, 373.

EVERYONE who read two small pamphlets by Mr. Robb, one called *Optical Geometry of Motion*, and the other with the same

title as the present work, will be greatly pleased that the more elaborate treatment foreshadowed in them has now been completed and published. The pamphlets were reviewed in *MIND* by the present writer recently. Mr. Robb's new book is most important and interesting, but it is not easy to review in a non-technical way. After a short philosophical preface, Mr. Robb introduces us to the notion of 'Conical Order'; this part of the book is practically a reproduction of his second pamphlet. He then lays down a number of postulates about *before* and *after* such that the elements in the field of these relations shall stand in a conical order. From these postulates he deduces two hundred and six theorems. The upshot of the matter is that the field of *before* and *after* is shown to be a manifold in which any element can be represented by four coordinates; three of these have the properties that we commonly ascribe to spatial coordinates, the fourth has those that we commonly ascribe to time. But, since the elements of which this geometry is composed are simply defined as constituting the field of *before* and *after*, and the postulates defining *before* and *after* are themselves obtained by considering the temporal relations of events, Mr. Robb concludes that he has succeeded in defining space in terms of time.

No philosopher interested in the foundations of physics can afford to neglect Mr. Robb's contentions. I think I shall best make Mr. Robb's position clear to the intending reader if I discuss shortly the following points: (1) The meaning of Conical Order and the reasons for supposing that instants stand in a conical order; (2) Some of the special notions introduced and defined by Mr. Robb, and their relations to the geometry of the cone; (3) The real philosophical meaning and importance of work on Mr. Robb's lines. I shall assume, what I have seen no reason to doubt, that the theorems really do follow from the postulates. I may remark in passing that those who are interested in symbolic logic will find it a very good exercise to state the postulates of the book formally and then to prove some of the more important theorems for themselves by the methods of *Principia Mathematica*.

(1) A relation is said to generate a conical order when it is transitive and aliorelative but not connexive, and fulfils certain other conditions. A very simple example of a relation that fulfils the first three is the relation *north of*. It is transitive; for the fact that Cambridge is north of London and York north of Cambridge implies that York is north of London. It is aliorelative; for no place is north of itself. It is not connexive; for two places, though each north of other places, may be neither north nor south of each other, since both may lie on the same parallel of latitude. Such relations are not serial, but it may be possible to find classes of terms in their fields which shall be in serial relations. *E.g.* the places on any one meridian of longitude are in a series. Mr. Robb calls the order generated by certain relations *conical* for the following

reason. Suppose we take any definite direction in ordinary space, and make every point in space the vertex of a cone with a fixed vertical angle and an axis parallel to this direction. Let us call α the relation that any point within the upper part of one of these cones has to the vertex of the cone. Any point in the lower part of one of these cones will have the converse relation $\tilde{\alpha}$ to the vertex of the cone. Then α is a relation which is transitive, aliorelative, and non-connexive. The first two properties obviously belong to α ; the last can be seen to belong if we notice that there are many points which are neither in the upper nor the lower cones through a given point. All such points have neither the relation α nor $\tilde{\alpha}$ to the given point. The surfaces of the cones through any point P are called respectively the α - and β -subsets of P . (Mr. Robb uses β to stand for $\tilde{\alpha}$.) We must notice that the cones are only used as illustrations, and that they only provide a satisfactory illustration for a three-dimensional manifold of elements. Mr. Robb's manifold is four-dimensional, but this does not prevent him from defining a conical order and α - and β -subsets in such a way as to agree with the geometrical illustration when we imagine the number of dimensions reduced to three.

So far we have merely been dealing with the logical properties of certain relations of which the relation α is an illustration. Now we come to a question partly of fact and partly of convention. Mr. Robb assumes that the relation of *before* and *after* between events is conical and not serial as has generally been supposed. This means that he assumes that of two events one may be neither before nor after the other, and yet may not be simultaneous with the other. Why should he assume this, which seems so paradoxical at first sight? His argument comes to this: I have two different means of judging about the temporal relations of events. If I directly experience the events I can make direct judgments about their temporal relations. If I do not directly experience both the events, but believe that one causes the other, I can be sure that the cause must proceed the effect. This Mr. Robb takes as an axiom.

Suppose that at a moment t_1^a I send out a flash of light from A to a mirror at B. Let it reach B at t_2^b and be immediately reflected back to A, reaching me there at t_3^a . Then the axiom tells me that t_2^b is after t_1^a and before t_3^a . And direct experience tells me that t_3^a is after t_1^a . But it seems that no influence travels faster than light. Hence no influence leaving B at t_2^b will reach A before t_3^a . We have therefore no reason to suppose that t_2^b is before any moment at A which is before t_3^a . Similarly no influence that leaves A after t_1^a can reach B at t_2^b . We have therefore no reason to suppose that t_2^b is after any moment that is after t_1^a . We have therefore no reason to suppose that t_2^b is either before or after any moment at A that is between t_1^a and t_3^a . And neither of our criteria enables us to judge that t_2^b is simultaneous with *any*

moment at A between t_1^a and t_3^a , still less to decide *which* particular moment it is simultaneous with. It is as a rule tacitly assumed that $t_2^b = \frac{1}{2}(t_1^a + t_3^a)$. Mr. Robb rejects this suggestion because, as we know, it leads when combined with the *facts* (as distinct from any theory) of relativity to the paradoxical results that events, simultaneous when observed from one system, are not so when observed from another. He holds that any assumption that leads to such a result must be rejected, because it is a fundamental law of logic that 'a thing cannot both be and not be at the same time'. I am not quite clear how Mr. Robb means to apply this principle to the present case. If he means that on the ordinary theory two events e_1 and e_2 are both simultaneous and not simultaneous at the same time, because in S_1 they both occur at t while in S_2 the one nearer the origin occurs later than the one further off, I should suppose that the answer is that there is no logical difficulty, because no one supposes that their simultaneity and non-simultaneity subsist at the *same* time. This would be inconsistent with the Theory of Relativity which refuses to recognise a time common to both S and S_1 , but simply holds that the laws of physics can be stated equally well in terms of the local time of *any* non-accelerated system. If, on the other hand, Mr. Robb means that if logic is to apply to all systems there must be a time common to all systems, I do not agree. We should only get into logical difficulties if from any system S' we were forced to judge that incompatible events occurred simultaneously in a system S . But incompatibility in physical matters is always spatio-temporal; *e.g.* we should need to judge that there was a green and a red flash at the same time and *in the same place* before we should find any logical difficulty. Now the ordinary theory of relativity never forces us to do this. It is only simultaneous events which occur at *different* places in one system that can be judged to be successive from another, and it is only successive events that occur at *different* places in one system that can be judged to be simultaneous from another.

However this may be, Mr. Robb prefers to assume that the relation of *before* and *after* between moments really is non-connexive, *i.e.* that certain moments are neither before nor after each other and yet not identical, and that this is not merely a matter of our inability to find a satisfactory test for their temporal relations in certain cases.

Before leaving this part of the subject I have two criticisms to make. (a) One would like to know how Mr. Robb is defining cause and effect. If he is merely defining it as it is commonly defined in physics as functional correlation, I fail to see why cause must proceed effect, or what precisely this means. If he is using it in some other sense we should wish to know what is the characteristic that distinguishes a cause from an effect. It must of course be an observable one, or the criterion will be useless. (b) Mr. Robb in this introduction does not make quite clear what he con-

siders to be the relation between (i.) the linear set of events in a single experience; (ii.) the linear set of events that happen to a single material particle; and (iii.) the statement that the only simultaneous events are those that happen in the same place. Are simultaneous psychical events in my mind in the same place; and, if so, in what place? Hardly in that of any *one* material particle in my brain; but, if in several, then simultaneous events do happen at different places.

(2) A good many of Mr. Robb's special notions can be easily illustrated from the geometry of the cone, though we must always remember that this forms an incomplete illustration, because the manifold of moments is for him four-dimensional. Thus an *Optical Line* is represented by a generator of a standard cone; an *Inertia Line* is represented by a straight line through the vertex that falls within a standard cone; and a *Separation Line* is represented by a straight line through the vertex that lies outside a standard cone. If we regard the axis of the cone as representing time elapsed (using time in the ordinary sense), and the three other coordinates as representing space passed over in the ordinary sense, we can see that an optical line represents the successive positions of an element of a wave-front sent out from the vertex at time 0 and travelling in vacuo, provided that the vertical angle of the standard cone is $\tan^{-1} c$ where c is the velocity of light. An inertia line represents the motion of any actual unaccelerated particle, assuming that nothing can travel faster than light. A separation line cannot represent the motion of any particle for this would mean that the particle travelled faster than light; any two points on it must therefore represent separate and distinct particles. Similarly we get three kinds of planes—optical planes, acceleration planes and separation planes. The conical analogies are respectively tangent planes, planes that cut the cone in two real lines, and planes that cut it in two imaginary lines. We also get three kinds of parallelism among optical lines.

As our manifold of instants is four-dimensional we shall have to consider *threefolds* as well as lines and planes. Here of course we cannot offer any geometrical illustration that shall be wholly satisfactory. A general threefold is the aggregate of all elements in any general plane P which intersects any general line a and of all the elements in all planes parallel to P that intersect a . (A *general* line means simply a line which is either optical, inertia, or separation, and a *general* plane means one which is either optical, acceleration, or separation. It is proved that these alternatives are exhaustive and exclusive, as can be seen from the geometrical illustrations taken from the cone.) It is found that there are three distinct kinds of threefold: these are called optical, separation, and rotation threefolds according as the general line a is an optical, separation, or inertia line.

Mr. Robb proves the extremely interesting and important result

that the geometry of a separation-threefold with his postulates is Euclidean. Before this he has had of course to introduce the notion of congruence. Congruence has to be defined differently for the different types of line, and segments on different types of line are not congruent with each other. Now the only kind of threefold that contains only lines and planes of a single type (*viz.* separation lines and planes) is the separation threefold. Hence it is obvious that only separation threefolds *could* be Euclidean. In other kinds of threefolds analogies to Euclid I, 47, hold, but they are only analogies.

At length coordinates can be introduced. We take three mutually normal separation lines in a separation threefold as our x , y , z axes. And we take an inertia line normal to this threefold as a t axis. But we must notice that, since congruence means something different for inertia and for separation segments, we cannot use the same unit for distances along the t axis as for those along the other three. What we do is to choose such a unit for our inertia coordinates that the conjugate to it (which is necessarily a separation segment) is c times the unit separation segment, where c is a constant. The constant will then be the numerical measure of the velocity of light.

(3) What precisely has Mr. Robb accomplished and what is the philosophic importance of his work? It seems to me that his results and their importance may be expressed somewhat as follows: Modern science has inherited from the founders of mechanics in the XVIIth century and from the Greek founders of geometry a certain general scheme of dealing with the physical world. This scheme treats the ultimate elements of physics as particles occupying various places in a three-dimensional space at various moments in a one-dimensional time. The time and the space are separate systems and neither is given to us in experience. This is true in three senses: (1) We never directly perceive a moment or a point. (2) We never directly perceive even aggregates of moments or points. (3) It is true that we perceive extended objects in spatial relations and are aware of the duration and succession of certain events. But our special way of interpreting these facts, *viz.* our view that the events take place at a certain moment in a single time and at certain points in a common space, is a construction and not something that can be analysed out of our sense-data. We do not perceive it, nor can it in any useful and natural sense be called a part of what we perceive.

This general scheme worked excellently in practice owing to a happy choice of spatial coordinates and to the fact that people were mainly concerned with velocities small in comparison with that of light. Accordingly its peculiar nature and its presuppositions were not much noticed until certain electromagnetic experiments were found to lead to very paradoxical conclusions. Then people were led to see much more clearly that all measurements

of distance make certain assumptions about time, and all measurement of time which refer to different places involve assumptions about spatial measurement. It thus becomes clear that we shall keep much closer to the empirical facts if we no longer start by assuming two different kinds of entities (instants with their temporal relations and points with their spatial relations). We shall do better if we start with elements of a single kind which come nearer to what we can actually observe, and by subjecting them to suitable postulates construct both the ordinary space and the ordinary time out of them. Construction here means nothing specially human. It means (a) that knowing approximately the results that are true we lay down the postulates that we think will give them, and (b) that the space and time of ordinary physics appear (with such modifications as experience demands) as special cases in the general scheme.

The great merit of Mr. Robb's work is that he has actually provided us with an alternative construction of this kind and shown us that it will fit all the facts at present recognised. And the philosophic importance of all such attempts is that, like the study of non-Euclidean geometry, they free the mind from ingrained prejudice and enable it to see that what appears a necessity of thought is often only one of a number of alternative ways of dealing with a single problem.

C. D. BROAD.

What do we mean by Education? By J. WELTON. London: Macmillan, 1915. Pp. xii, 257.

AN increasing number of teachers and educational administrators are taking a keen interest in the theoretical aspects of their work, and to such readers Prof. Welton's book should make a strong appeal. It will also serve as a useful guide for readers who are not actively engaged in education, but who desire to keep in touch with the wider movements of educational thought and practice. For both classes of students the work is valuable mainly because it is the fruit of a serious effort to view educational problems in the light of a more or less definite conception of human life. "Theory of education," Prof. Welton tells us, "cannot be separated without disaster from theory of life," and he puts his doctrine into practice with the help of much hard thinking and a long experience of educational work. His criticism of one-sided and exaggerated views is particularly valuable. If the enthusiastic advocates of educational panaceas could be induced to digest his book, the outlook for school reform would become appreciably brighter.

I wish to emphasise these merits of the book before us, because they are by no means neutralised by certain weaknesses which

may rouse a feeling of disappointment in readers interested primarily in educational theory. Such readers may agree generally with the conclusions reached, and yet feel that these do not throw much new light upon the subject. This is due, I believe, to the very abstract character of Prof. Welton's educational ideals. He lays down certain general principles, but does not apply them to the solution of concrete problems. His theory is, therefore, imperfectly coherent; it bears some likeness to a geological formation with three strata, *viz*: a doctrine of the educational ideal, a number of intermediate principles, and some reflections upon current questions. Each of these strata is valuable in itself, but there is little interpenetration. This lack of complete coherence is reflected in the structure of the book. The general plan is clear, but the various chapters give us mainly discussions of comparatively isolated questions. It follows that it is difficult to grasp the theory as a whole, especially as the exact meaning of several passages is far from obvious. These weaknesses are no doubt partly the result of an attempt to make the book at once short and readable, still I think they must be attributed in part to the lack of organic coherence in the point of view expounded.

I will try to illustrate Prof. Welton's line of argument by giving a brief outline of his account of educational science, and then making some remarks on each of its sub-divisions. A perfect science of education, he tells us, would be "a complete doctrine of educative means affiliated to a universally accepted end, based on exact knowledge of human intercourse, and continually verified by the test of educative practice" (p. 27). Unfortunately, agreement as to the end is at present unattainable, and he holds that the first step forward is a frank recognition of this fact. "The most that it seems possible even to hope is that earnest and consistent efforts may be made to realise each ideal aim which, after all efforts at synthesis, remains unresolved" (p. 40). The doctrine of the end must be worked out by each thinker for himself. "To meditate and decide upon the ultimate questions of life is the very first requirement of a true educator" (p. 33), although "the day when these essentially metaphysical questions will be settled by the agreement of all competent thinkers is certainly not within measurable, even if it be within conceivable, distance" (p. 28). It is true that a synthesis of opposing views on certain points may be attained, but such a synthesis leaves untouched the fundamental differences of view which for our purpose we must accept as final. On the other hand it is possible to develop a doctrine of educative means, that is of "the influence of educative agents upon those who are to be educated" (p. 10). This doctrine will be recognised as valid by all competent judges irrespective of their views on ultimate questions, apparently because it will be built up by methods analogous to those of physical science. It will be derived inductively from an examination of the processes and results of

different forms of education. "The hypothetical laws of educative means—If so and so be done, such and such a kind of result may be expected—can be investigated as cases of natural causation" (p. 30). "The doctrine would have three main branches—the efforts of the educator, the possible responses of the educated, and the relations between the educator and the educated that determine which of the possible responses of the latter are actualised" (p. 9).

Prof. Welton gives us a very interesting account of the difference between the investigations by which this doctrine of means will be advanced and ordinary psychological experiments,¹ and adds: "The nearer investigations keep to the concrete point of view, the more fruitful they are likely to be for a theory of educational practice. Investigations into such matters as the relative effectiveness of various methods of teaching particular subjects, of stimulating particular powers, interests and tastes, of curbing definite faults and developing definite merits, may not attain a specious appearance of exactness of quantitative statement, but the results they do give are real and directly pertinent" (p. 24).

If this account of Prof. Welton's theory of education is approximately correct, the theory seems somewhat deficient in organic unity. The distinction between a doctrine of ends and a doctrine of means may be useful for certain purposes, but it here assumes too absolute a form. As a result, neither of the doctrines does justice to the special aspect of the experience of educating with which it is concerned, because that aspect is considered in isolation from the whole. Hence the doctrines are valid only for that small part of the educator's experience in which means and ends are not inseparably combined.

The abstract character of Prof. Welton's doctrine of ends will become apparent if we take his own theory of the ultimate end of education as typical of the kind of doctrine he desiderates. In the course of the chapter on "What should be the End," he describes the ultimate aim of education as "the development of full and effective human personality—that is a life in full and admirable relations to the universe" (p. 84), or as "a relation to that highest good and true personality we call God" (p. 91), or, again, as the perfection of man's spiritual nature (p. 93). Ideals such as these abstractly have their value, but they must be given a more concrete form, and one in closer relation to educational practice, before they can become the guiding principles of educational theory. It is true that in one passage (p. 93) Prof. Welton gives us a less abstract statement of his educational ideal, but when he does so his excellent description owes more to the ethical standards generally recognised as valid by serious men than to his own abstract

¹ He apparently assumes that psychological experiments aim always at quantitative results, which is surely not the case, for instance, with many experiments on thought processes.

definitions. This involuntary appeal to contemporary ideals indicates, I think, the method by which we may hope to bridge the gulf which in his doctrine, as in most theories of education, is fixed between ultimate ideals and practical experience. The aims of education will take different forms according to the ideals of the community by which the education is carried on. These ideals require to be analysed and their value gauged by reference to some ultimate standard, but they largely determine the actual aims and problems of the educators, and their discussion must form an important part of any satisfactory doctrine of education. The practical importance of such a discussion is illustrated by Prof. Welton's valuable remarks on the relation which the methods of a school should bear to the mental characteristics of the class from which it draws its pupils. He also recognises that education must take account of the "intermediate principles of life which are generally accepted as valid, and which form the framework of the widest common life in which we share" (p. 41). The greater part of his second chapter is, indeed, devoted to the discussion of some of these intermediate principles. Unfortunately, however, he does not use the results of this discussion to bridge the gap between his ultimate ideal and the actual work of teaching.

It may be noted as characteristic of Prof. Welton's mode of thought, that theories of the aim of education are regarded as the more or less independent constructions of individual thinkers, not as moments in a combined advance towards the systematic explanation of the experience of educators. This view explains the disproportionate emphasis laid by him upon the necessity of "meditating and deciding upon the ultimate questions of life". Surely a man may be a true educator without having definite and explicit views on questions which are "essentially metaphysical". Some of the best schoolmasters I know would certainly be puzzled if asked for a definition of their ultimate educational ideal.

Turning now to the second branch of Prof. Welton's theory of education, the doctrine of means, we find the same abstract mode of treatment in another form. He appears to hold that we may accumulate a stock of methods which are known to produce certain results. If a given result is required by our special aim, we can apply the relevant method, and within certain limits may be confident of success. If we want a boy to memorise a stanza of a poem, we shall advise him to learn it as a whole, not line by line. But the doctrine of means as thus conceived applies only to the technique of teaching, and only to that part of the technique which is capable of being reduced to definite rules. When applied to the problems mentioned by Prof. Welton, such as the best methods of teaching a subject, or the eradication of a fault, its use, though real, would be very limited. In such cases the selection of means is less difficult than that of ends; for the crux

of the problem is the clear determination of our general aim and of the whole system of subordinate aims which it involves. Moreover there are many elements in the process of education that defy analysis of Prof. Welton's kind. The personality of the teacher, for instance, is admittedly all-important. It follows that if the doctrine of means is to fulfil the function assigned to it, the hard and fast distinction between means and ends cannot be maintained. To consider either means alone or ends alone is to do violence to the experience of educators, and it is to this experience that we must constantly return.

I have discussed Prof. Welton's conception of educational science at some length, because that conception is typical of his line of thought. In the second and third chapters he contrasts various current views of educational ends and shows that they emphasise isolated aspects of more comprehensive aims. This is the case, for instance, with the theory that man is the product of his environment, or that he is independent of it, or that the child should be given liberty, or that it must learn obedience. In each case he has much to say that is worthy of attention, but in each case his conclusion is too abstract to be of great practical or theoretical value. The opposing principles are not really brought into organic relation with each other, and our mental life is not viewed sufficiently as a concrete whole.¹

The remainder of the book deals chiefly with practical questions, and here Prof. Welton's criticisms and proposals for reform are, as we might expect, both pertinent and suggestive. His account of the kind of training which should be given to intending teachers is influenced by the conception of educational science which we have been considering, but as a rule his discussions on practical problems will win the assent of many readers who do not altogether share his theoretical views.

These views I have criticised somewhat freely, but I should like to add two saving clauses. First, I am aware that I may have failed fully to understand Prof. Welton's meaning. His episodic method of treatment leads him to emphasise first one aspect and then another of his subject, and it is not always easy to grasp his position as a whole. Secondly, my criticisms do not imply any lack of sympathy with the general purpose of the book. Most philosophical questions have their humble counterparts in educational thought and practice, and though I do not think that we can wait until philosophy has given a final answer to these questions before attacking them in our schools, yet I feel strongly the urgent need of bringing such results as philosophy has achieved to bear upon the problems of education. This is the difficult task which Prof. Welton has attempted, and my only criticism is that he has not carried the process far enough. I am sure that if he

¹ See, for instance, the account of moral training on p. 46.

would put his doctrines into a more definite and systematic form, he would render a valuable service to the cause of education.

H. BOMPAS SMITH.

Il Fine dello Stato. ALESSANDRO BONUCCI, Prof. di Filosofia del Diritto nella R. Università di Siena. Athenæum. Roma, 1915. Pp. 464. Lire 9.

THE two fundamental points in Professor Bonucci's instructive treatise appear to me to be his treatment of the Will of the State—its essence and its seat—and the distinction, which pervades his entire argument, between real and ideal ends of the State.

The work opens with three relatively formal chapters, which carry the reader through the former of these ideas to the latter. This in the remainder of the book is developed historically and philosophically.

The Introduction, "The Valuation of Right and of the State," deals with the degrees in which three juristic sciences respectively employ the conception of end—in other words, allow themselves to value and to criticise their subject-matter. Broadly speaking, Scientific Jurisprudence (*Dommatica giuridica*) only classifies and does not criticise; although even to classify it must admit a proximate end, which alone can enable it to determine the relative importance of characteristics in conceptions, and to note incoherences in a legal system. For a rule of law expresses a will, and a will, if we are not to suppose "legislative insanity" (*pazzia legislativa*) implies an end which is what gives unity to the system. Not that the end is a constituent of the law; it is only an aid to its interpretation.

Politics, or Political Jurisprudence (*Politica giuridice*) carries criticism a step further. It accepts indeed the supreme end of the given state, as construed by help of the "justifications" or proximate aims of its rules. (The *existence* of the rule is enough by itself to presuppose a will which aimed at establishing it.) But it confronts the system of rules with the actual consequences of their application, as furnished to it by the social and statistical sciences. It values and criticises and suggests ameliorations. It establishes an obligatoriness of means, depending hypothetically on the given end.

When we transcend these limits of valuation and raise the problem of the true end of the State—of absolute justification or obligation—then we are beyond both scientific and political Jurisprudence, and are in the realm of philosophy—the Philosophy of Right or of the State. "Per amor di realtà non si neghi quest'altra realtà."

The following chapter, occupying eighty pages, treats of "the Will of the State," its nature and its seat.

The idea of the "Will of the State" is akin to that of "the law in force" (*diritto vigente*). This will does not exist in the written law, as its meaning, but behind it, as its cause. Does it exist in the wills of particular persons, either some or all of the citizens? The author rejects three theories to this effect, including among them that of Gierke. Perhaps a difficulty which he seems to find in dealing with a unity of individuals distinct in space, causes him a little to exaggerate the affinity of Gierke's view with such theories as these. Passing from them he mentions a curious doctrine of Kelsen, which, though he rejects it, has, I think, influenced his own. Kelsen's theory is that the Will of the State is a centre of imputation; *i.e.*, as the action of an organ of the State cannot be imputed to the organ's own will (which does not count in law—the author urges this throughout), and must be imputed to some will, you must assume the Will of the State to impute it to. It is simply a juristic expression. The author rightly calls this an impoverishment of the idea.

The author's own view rests mainly on "the subordination of the organ" in close connexion with the idea of "law in force". The "juristic existence" of the Will of the State is coincident with the recognition of it as obligatory by the organs of the State (primarily, I suppose, the law-courts). This, as a character reflected upon it, is its supremacy (not sovereignty—there can be a "supreme" will in a State of a federal body). If we further ask what distinguishes a rule of law of the State from a moral or religious rule, the answer is that it must be one which belongs to a unitary will, supreme in a certain territory, and capable of guaranteeing the satisfaction of the fundamental needs of a social life. Compulsion is not the essential mark; it is an incident, and not in itself a desirable one. I am not clear that this opinion reaches the full depth of the matter.

Every rule of law is addressed primarily to the "organs," and only by implication to the mass of the citizens.¹ It is recognition by the former, not by the latter, that determines whether a law is in force, *i.e.*, whether it expresses a living volition of the State.

Many further points of interest are dealt with in this important chapter. I can only mention one. In a treaty between two or more nations, is a new common will created, such as to survive the

¹ The author does me the honour of criticising my view of the "general will," as formulated too much in terms of ideas in the minds of the citizens, and too little in terms of will imposed upon them. I do not lay much stress on the difference between ideas and will, if it is understood that the ideas are self-realising. But I do find a difficulty in such a phrase as "*Volontà che al cittadino s'imponga da fuori*". You must show the Will of the State, I should have said, as logically, though not in time, an outgrowth of the individual will.

alteration of the will of a contracting party (as the will of the State does at home)? Or is a treaty simply an expression of separate and supreme wills, such that when one is altered the treaty falls to the ground? The author's solution is that while (as Hegel said) there is no will concerned but the separate wills of the contracting parties—that is, no new or supreme will is created; yet there is a *relation* between the two wills by which each is ground of the other, which suffices to distinguish them from separate wills of the two States. He complains that jurists insist on inventing new objects when all that is needed is to recognise relations. Of course a question might be raised as to what a relation implies. And in any case, if a true inclusive community were *bonâ fide* recognised, might not an inclusive will, as its will, be real?

Passing to chapter 2, "Il Fine reale dello Stato" (the *actual* end of the State), we proceed from the point which we reached in defining the Will of the State in terms of supremacy and the guarantee of the satisfaction of the fundamental wants of social life (*convivenza*). The expression, used as early as p. 30—"fine supremo d'un certo Stato," of course raises a problem. Can we assign a given State a supreme end in distinction from that of any other State? But we must follow the author's meaning. You cannot refuse—such in general is his argument—to infer from the complex of rules of law to their "justification in the interests which they protect," and the minimum of such interests implied in the system of any State, *e.g.*, the minimum required for its international recognition as a State, is expressed by the definition above cited. The "satisfaction of the wants" is here the end, as a means to which the "guarantee of their satisfaction" is a subordinate end.

Here you have the actual and indispensable end of the state. You may find in history other real ends, dispensable ends, which conflict with it, such as the personal interest of the prince. In as far as this is the case, the complex of real ends of a given State cannot be brought under a unitary concept. This acknowledgment seems to show that the distinction between the real and the ideal end is not ultimately tenable; that is to say, it has here had to be introduced between elements of the "real" end.

I purposely chose for analysis the formal introductory chapters, which appeared to me the most characteristic part of the work, if not to all readers the most interesting. The remaining 320 pages consists of historico-philosophical discussions both of "real" ends as determined in different periods, and of "ideal" ends as imputed by philosophers. "German metaphysic will be immortal," the author says (p. 218), "for its contribution to the modern or positive idea of liberty". His own conception of the absolute end of life, from which the absolute obligation of the ideal end of the State is derived, runs on similar lines. It is the "autonomia più integrale di noi". And he draws a notable distinction between

two conceptions of human happiness by which this "end of the State" may be interpreted. One may understand by it the provision of complete satisfactions, or the placing of the citizens in a position to attain them by their own activity. The latter, and not the former, is in harmony with the ideal end of the state.

Though making very great use of German sources, the author is not wholly in harmony with, for example, Hegel's attitude. He thinks that it leaves too little to free will, and little, therefore, to valuation; for only what is free can be valued. Schelling he rather oddly places alongside of Hegel's foe, von Haller, as denying peculiar and ulterior "ends" to the State. But surely in the sense of their denials they are at the opposite poles of philosophy.

The book is one of great learning, and the historical approach, as emanating from a Latin country, is a little different from that to which we are accustomed, and all the more welcome and instructive to us. The curious question of the subordination of the State to the Church is treated in detail, and one is struck by the comprehensive affinities of the doctrine that the State is the result of sin. Of course it seems that we should be nearer the ideal if we could do without it. But perhaps this is hardly the ultimate truth either about the State or about sin.

I am doubtful about the classification of Aristotle's and Plato's views of the "End" as Eudæmonist and Ethical respectively. These modern terms are so thin and poor compared with the Greeks' solid grasp of life. I wish we could form a habit of treating Greek thought more concretely, and without ranking it under modern abstractions. Nor am I quite satisfied that the spiritual unity involved in Plato's Republic is here adequately represented. But I am delighted to be made acquainted with the lines which Professor Bonucci sets in contrast with it, lines of Arator, whom I gather to be a Christian poet of the sixth century.

Ecce tot egregiis unum cor inesse catervis
Cernitis, utque animam populus nanciscitur unam.

And with this quotation I take leave of this valuable work, regretting to have done so little justice to its learning and its wisdom.

BERNARD BOSANQUET.

The Foundations of Character ; being a Study of the Tendencies of the Emotions and Sentiments. By ALEXANDER F. SHAND, Macmillan, 1914. Pp. xxxi, 532.

MR. SHAND'S work on the Emotions has been known for many years past to all serious students of psychology in England; and it is with cordiality and gratitude that they will receive this large and valuable contribution to that aspect of psychology which he

has made so especially his own. His claims on behalf of the work are much more modest than his achievement.

The leading features of the book are (1) an attempt to lay down a method by which a science of human character may be achieved and (2) a formulation of a number of tentative rules or laws on the basis of which the beginnings of the science may be commenced. Without them, or some such rules, the subject, he thinks, is too difficult and intricate for scientific treatment: the growth of the science should consist of the accumulation of evidence both 'pro' and 'con' under each of these rules. Personally, I see the necessity for some such procedure; but the difficulty is that those who are unable at the outset to accept the broad conceptions which, overtly or tacitly, underlie the whole of the work, will find cause for dissent as they proceed. Is it better, for example, to build up a science of character from a basis of instincts and other conative tendencies or from a basis of emotions? I agree on the whole with Shand as against McDougall, if we use the term 'emotion' in its ordinary sense, that there is no one-to-one correlation between instincts and primary emotions; but I am not sure that great instinctive trends, to wit, home-making, have not a specific feeling-tone throughout, which *may* be called an emotion, or, at least, an emotional attitude; though joy, sorrow, fear and anger, from time to time, cluster along its pathway to success or failure; as indeed they may with respect to any and every conative tendency, instinctive or otherwise. And this leads me to my own difficulty—one which perhaps I ought not to feel. To me it seems so much more systematic to build up character from instincts and conative tendencies, and to fit in so much better with biological science generally, than a procedure which builds up mainly from 'primary emotions,' that it requires, as it were, a *volte face* on my own part to accept the author's view-point. 'Emotions are forces' he says again and again, and speaks of *their* instincts. I should want to stress the instinct as forceful rather than the emotion; for we could hardly justify the application of forcefulness to the emotion by the method of concomitant variations; and, though I believe, according to Mr. Shand, joy is, so to speak, its own 'end,' he would not, perhaps, ordinarily wish us to conceive emotions as forces to realise themselves, but rather the instincts or tendencies which they accompany.

Mr. Shand then, begins with the primary emotions. He does not wish his analysis to be preoccupied by their constituent feelings or sensations but rather with their tendencies and biological value. But let no prospective reader suppose that there is no analysis in this book. To me, indeed, it is just this fulness of analysis and concretion, with its delightful and widely-chosen illustrations, which gives the book so great a charm—to cite two cases only, the interesting paragraph on self-abasement on pages 32-33 and the eloquent description of pity on page 48.

It is also refreshing to find the author quite frankly appealing

to those unscientific people, poets and novelists, for much of his aptly-chosen material, as in the capital paragraphs about Balzac's old Grandet (pp. 124-125).

Mr. Shand starts his emotions with (a) a cognitive attitude, (b) a conative attitude, and (c) a feeling attitude, but the reflective consciousness is purposely omitted. When I read this, I said to myself, 'Will and Intellect have gone, our science of character cannot deal with them'. But this was an error on my part; and, as it may be a more than personal one, I wish to enter a caveat at the outset. For it is involved in Mr. Shand's method to make his generalisations too unconditional at first, and qualify them step by step and stage by stage as he proceeds. Will and Intellect do come in, though it may be a matter of dispute whether he places adequate stress on their influence; he certainly does not use them in what might be called the ordinary academic sense: it is easier, he says, to characterise a man by what he does than by what he is. But we must not forget that religion partly owes its great popular appeal to the opposite procedure; and it is well to remember it has been held that the only truly good thing is the good will.

But, in this case again, the progressive nature of the author's work makes me very unwilling to assert that he will not take due account even of such facts and conceptions as may seem irreconcilably antagonistic to his expressed views. For he promises us another book dealing with the 'sentiments' at the same length as that which he has devoted in this volume to the emotions.

Emotions, by addition, organisation and interpretation, become sentiments. These are the stable things: what we love, what we hate, the sources of our joy and sorrow, the directions of our curiosity; these objects, organised into systems with intellective and emotional factors, are what we want to know when we think of a man's character.

It is due to Mr. Shand that, among English psychologists, the word 'sentiment' has replaced the older word 'passions'. He holds, and rightly, I think, that the word passion connotes something too violent perhaps, certainly too spasmodic, for correct application to the sentiments. Only in the compound 'ruling-passion' does the word seem to convey the steadiness which the sentiments possess.

Of course all this is very unlike the common descriptions by which most of us in daily life manage to convey what we have to say about the characters of others or even about our own. Any newspaper or official testimonial will supply illustration. Such a person, we say, is diligent, persevering, penetrating, honest, loyal, *et id omne genus*. I do not suggest that the classificatory concepts of science should be determined by the practical exigencies of persons who, so to speak, have to deal in characters. But I shall look forward with pleasure in the hope of seeing some method

advanced in detail which will enable us to take in and improve upon, or even, it may be, to abolish some of our well-worn and apparently fairly efficient characterisations. Perhaps, however, these things belong rather to the superstructure than to the foundations of character, though I am by no means sure about that.

To the foundations at any rate belong the tendencies of the primary emotions, and I am bound to say that Mr. Shand does, too easily as it seems to me, appear to accept, here and there, a kind of optimistic evolutionism. On one occasion he speaks of the instinct to build battleships as directed to the preservation of the race, and sometimes forgets, I think, that biological utility often compels us to dissociate inherited connexions between stimulus and response.

A primary-emotion-exists; it-is-therefore-justifiable, and-serves-on-the-whole-a-useful-end is perhaps an exaggerated way of presenting the implications. But these implications do seem to me to be involved, just as they are by many writers on instinct. Both emotion and instinct, however, have finally to be justified before the bar of the reflective consciousness. If this is an ethical standpoint rather than a psychological one it is at least involved in a science of character. That question is perhaps not now at issue; but I am concerned, simply as a matter of fact, to ask for serious limitations to the inevitability and non-modifiability of instincts and to the utilities of the emotions. Mr. Shand's excellent method of limitation and qualification may, in reality, have quite well guarded against the interpretation of which I complain; but I can only say that the book as a whole leaves me with some such an impression. I hope, in a subsequent volume, the author will take up practically the questions of character with which we are all concerned, to wit, the influences of heredity and environment, the influence, if any, of direct moral instruction and allied problems. Does an appetite, as he asserts, become more urgent the longer it remains unsatisfied? Does it not often die away? It seems to me that specific treatment of these issues could be given in tracing the growth of the 'emotions' into 'sentiments'.

But I must not, in asking for more, forget my great indebtedness for what I have already received. From Mr. Shand himself, in many talks and addresses, I learnt, badly I fear, to think through him about 'emotions' and 'sentiments'. His view of sentiments I still subscribe to; his conception of the emotions has gone beyond me and embraces more than I can hold. But I am loath to maintain the view of a man to whom the psychology of the emotions is only a part of general psychology against one who, like the author of this work, has made emotional psychology a life-study. In any case, he has written a book on the emotions which, for patient description, broad-minded receptivity, ingenuity of method, and modesty of statement, will not easily be surpassed.

W. H. WINCH.

VII.—NEW BOOKS.

India, Her Cult and Education. I. Introductory. By PRAMATHA NATH MUKHOPADHYAYA. Published by the Author, 12-1 Nyan Chand, Dutt Street, Calcutta. Pp. 111.

Vol. II. *The Approaches to Truth.* By PRAMATHA NATH MUKHOPADHYAYA, of National College, Bengal. Published by T. S. Basu, B.Sc., 12-1 B Nayan Chand, Dutt Street, Calcutta. Pp. iii, 442. 6s.

THESE books contain a good deal that seems fantastic to the Western mind, but also a good deal which, if beginning to be trite, is still worth attending to. The Introductory pamphlet deals with the future of Indian education. It labours needlessly, as we may think, the point that the history and individuality of a people must be considered in framing plans for its education. But the bearing of the argument is worth our attention. It is the old one, that with all its defects, its sleepiness and backwardness, Indian civilisation retains a secret which it will not abandon, and which the West would do well to learn for itself, and not to try to extinguish where it lives. When all is said, the powers of India,—those who have the reverence and mould the convictions of the people,—are what we should call the saints and the thinkers, not the plutocrats and the officials. I have really no competence to enlarge on this theme, or to criticise the assertion. But something of the kind is commonly alleged, with whatever reservations, by those who ought to know. And I have little doubt that in the main it is true; and if true, it is surely a point of the highest significance.

The second volume is a philosophical treatise on reality. The author claims that his method is essentially direct, the interrogation of his own reflective intuition, and that the result is in harmony with the teaching of the Upanishads. On this point I have no opinion. But the writer's expression has been influenced mainly by James's Radical Empiricism, and to some extent by Green's philosophy. To the former, which is his starting-point, the author takes up in the end a critical attitude, which is one in essence with his attitude to the metaphysic of Buddhism.

His principal thesis, constantly recurring, is the seamless unity and allogical character of the direct intuition in which we actually live and move and have our being. You may call it, with James, a pulse of experience. But in the end this is inadequate because "a pulse" presupposes a series of pulses outside it; and all our universe, *prima facie*, is within the seamless intuition, and only outside it by a logical or conceptual construction. This is his difficulty again with Buddhism. The real cannot at once be a single experience and an actual endless series of events. The series of events must somehow be within the single experience which we possess or subordinated to it. For him, all series, things, organised reality, arise out of, but within, the great single intuition, by the operation of the Veil—that is the abstraction by which our pragmatic interests bring out "fact-sections" (what we call facts). These are never

really isolated and discontinuous, though we take them so. *The one "Fact" is only veiled; it is never annihilated. It is the element of our life, the background and foundation of all our knowledge and reality, which are no more than partial stresses within it. Consciousness is the plenum, the atmosphere of being. But there is no solipsism, for experience, the ocean of conscious being, is prior to the "me," and it is as true that experience has me as that I have experience. Subject and Object are only stresses in the one sea of experience, and we can often catch them absent. Grades of our Universe are constituted by the modes and degrees of Veiling on the surface of the individual Intuition. And for all this—the nature and grades of stresses—the author employs a quasi-mathematical terminology, distantly analogous to that of Herbart, but not, he warns us, expressing combinations of separate factors, only describing stresses and results by comparison with such possible combinations.*

There is a danger point I think when he urges (very often) that all beliefs and affirmations of possibility and reality being *within* our one intuition can never take us to anything outside it (such as reality apart from consciousness). If he means to something wholly discontinuous in kind, the argument may be sound. Otherwise, it runs near to a fallacy. Undoubtedly he does believe that consciousness at one stage or another—not logical consciousness—is the basis of all being and cannot be thought away. The view is not wholly unlike Husserl's intentional world.

I think that the force with which the main contention—the contrast between *the one fact*, and our pragmatic "fact-sections"—is held and expressed, has a value. I fear there is a tendency in the book to what even the widest-minded of us would call superstition—*e.g.* rejection of Western medical science.

BERNARD BOSANQUET.

The Works of Aristotle (Translated into English under the Editorship of J. A. Smith and W. D. Ross): *De Mundo* (Translated by E. S. Forster); *De Spiritu* (Translated by J. F. Dobson). Oxford: Clarendon Press, 1914.

Magna Moralia (Translated by St. George Stock): *Ethica Eudemia, de Virtutibus et Vitiis* (Translated by J. Solomon). Oxford: Clarendon Press, 1915.

Detailed criticism of these new instalments of the Oxford translation of *Aristotle* would be out of place in any but a specially philological review; MIND can but express the gratification which will certainly be felt by all its readers at the steady advance which is being made towards the production of a worthy rendering of the whole Aristotelian corpus into our own language. Of the works comprised in the volumes before us, the English version of the *Eudemean Ethics* should be particularly welcome, as it makes accessible to the moral philosopher who is not at the same time a finished Greek scholar the first and most authoritative of all commentaries on Aristotle's own *Ethics*. As Prof. Burnet said, in justification of his inclusion of much of the Greek text in his edition of the *Nicomachean Ethics*, we cannot reasonably expect to understand Aristotle better than the foremost of his personal scholars did, but until the issue of the present volume readers who are obliged to get at their Greek philosophy through English versions had little opportunity of knowing how Aristotle's ablest pupils did understand the more difficult points in their master's doctrine. Their thanks to Mr. Solomon for his careful rendering should be very sincere. Mr. St. George Stock, besides

translating the later Peripatetic handbook oddly called the *Magna Moralia*, has deserved well of the serious student by the careful indexes and full tables of contents which he has prefixed to both works. In his brief introduction to the *Eudemean Ethics* he carefully collects the available evidence for deciding the moot question whether the three 'books' which are common to this work with the *Nicomachean Ethics* originally formed part of the latter or of the former treatise. He inclines strongly, on linguistic grounds, to the view that they are originally "Eudemean," though he takes the sting out of his pronouncement by his recognition that in doctrine the books are in any case Aristotle's. His decision could only be challenged on the strength of a special study such as the present writer, for one, has not bestowed on the question, but it would, I think, be possible to weaken *some* of the linguistic arguments if one were allowed to appeal—and why may one not do so?—to the diction of Aristotle in general, not merely to that of the *E.N.* Nor can I think Mr. Stock right in disposing quite so easily as he does of the difficulty, insisted on by Prof. Burnet, of crediting Eudemus with the queer mathematics of the discussion on Justice. Mr. Stock argues (*a*) that after all we do not know that Eudemus was a specially good mathematician, (*b*) or that Aristotle was a specially bad one. It may be replied to (*a*) that the list of Eudemus's works is of itself enough to show where his main interests lay; his exceptional fame among Peripatetics is some guarantee that he was good at his *métier*, and to (*b*) that the helplessness of Aristotle's criticisms of the Academic mathematics settles the question of *his* competence. Also it might be a difficult question to answer how any editor of Aristotle's lectures on conduct could have omitted to treat of such problems as the nature of "practical goodness of intellect" and of "moral weakness," as the editor of the *E.N.* must have done if the three books, *E.N.*, v.-vii., are a mere supplementation of a completed work by transferring to it bodily more than a third of another independent book. Hence, if the disputed books were originally, as they stand, the work of Eudemus, I cannot help thinking that some explanation of their recurrence in *E.N.* other than that of mere borrowing is called for. How, for example, if the *E.N.* itself were a redaction of Aristotle's lectures by more than one "editor"? Then the books might be "Eudemean" and might also have formed part of the *E.N.* from the first.

Of the smaller and unauthentic works included in the list at the head of this notice, the most interesting is the *De Mundo*, a lively sketch of cosmology based on the doctrines of Poseidonius and consequently presenting interesting points of contact with the similarly Poseidonian *Questiones Naturales* of Seneca. It loses nothing of its quite un-Aristotelian liveliness in Mr. Forster's version.

A. E. T.

"Obliviscence and Reminiscence." By P. B. BALLARD, M.A., *British Journal of Psychology*: Monograph Supplements. Vol. I., No. 2.

This is a record of one of the most interesting psychological researches yet made in this country. Dr. Ballard has succeeded in demonstrating quite definitely that material learned by young children is actually better remembered three days after the material is learned than immediately after learning, a phenomenon to which Dr. Ballard applies the term *Reminiscence*. The experiments were carried out with a large number of school children of various ages, over 300 school classes being tested. Children of six improved in their memory of a poem to the extent of 50 per cent. or 60 per cent. in two days: as the age of the children in-

creased the improvement decreased. Subjects over twenty years of age did not improve at all through the lapse of time. These are only statements as to averages: individuals were found to vary enormously.

A curious fact is that an improvement in the total quantity of the poem reproduced after two days was often accompanied by a forgetting of some of the material initially remembered. The more comprehensible and the more interesting the material, the greater was the amount of improvement, but it occurred even with nonsense syllables. The percentages of improvement due to the lapse of time is greatest in the case of the least intelligent children, though the absolute *amount* due to such recovery or reminiscence is greatest with the most intelligent children.

It is asserted that such reminiscence occurs even where the poem is not thought of in the interval. It is, of course, impossible to prove in the case of children that the poem is not so thought of, and it is shown that a systematic attempt to recollect the poem during the interval has a very decided effect in the amount of reminiscence. But this does not explain away the fact that material is remembered after two days' interval which was not remembered immediately after learning.

The theory that fatigue due to learning the poem prevents recall after learning is discredited by the fact that such fatigue should have completely disappeared the day after the learning of the poem, yet improvement in reminiscence goes on till the second or third day. Nor does the amount of reminiscence increase with the length of time spent in learning the poem, though the amount of fatigue undoubtedly does. Facts certainly seem to favour the theory of neural growth which Dr. Ballard supports, *viz.*, that the modification of brain structure which takes place during learning continues after the learning has ceased—that the inertia of the nervous system gives way slowly, but continues to give way after the external impressions have ceased. This theory seems to find confirmation in the fact which Dr. Ballard mentions elsewhere, that the children who learn most slowly, *i.e.* in whom nervous inertia is greatest, show the greatest amount of improvement with the lapse of time. As an experimental research the work is a model of good method and of thoroughness. It is freely illustrated with admirable diagrams and graphs.

C. W. VALENTINE.

The Backward Child. A Study of the Psychology and Treatment of Backwardness. By BARBARA S. MORGAN. New York and London: Putnam's Sons, 1914. Pp. xvii, 261.

This book is the outcome of two years' experience in an experimental clinic in New York. The main emphasis is upon the facts that backwardness is not a *general* incapacity but that it consists in specific weakness in one or two forms of mental activity, that these can be discovered through comparative isolation by means of suitable tests, and that then these specific weaknesses can be improved through appropriate training. Both the tests for the discovery of mental weakness and the tests for training are of the nature of sensory, attention, memory, or intelligence tests familiar to most students in the psychological laboratory.

The description of these tests is not exact or full enough in this book to make it adequate for the use of a novice in the subject. Indeed the author rightly admits that the testing of the children can only be done by a trained experienced examiner.

Though the main contentions of the book are undoubtedly sound, it can hardly be described as of great value as a contribution to the psy-

chology of backwardness. Psychological terms are used in an unusual and occasionally unscientific way, and explanations of experimental phenomena are sometimes given dogmatically without adequate proof. For example, when a child, when the letters C (K) A T are pronounced, says they make RAT, it is assumed that his sense of sound is deficient. Again, when stronger stimuli are found to produce better attention than weaker ones, and when the attention was subsequently "trained" by such stronger stimuli, it was assumed that this would result in a general improvement of attention so that weaker stimuli would be better attended to in future. But this statement surely needs careful qualification. Though the book is not of great value as an original contribution to psychology it should, however, prove very suggestive and stimulating to teachers with a psychological interest, and to parents of "backward" children.

C. W. VALENTINE.

Spiritual Healing: Report of a Clerical and Medical Committee of Inquiry into Spiritual, Faith and Mental Healing. Macmillan & Co., Ltd., 1914. Pp. 56.

This "Clerical and Medical Committee" contains some names well known both in the clerical and in the medical world. There are eleven clergymen and ten medical men. They held nineteen sittings and took "evidence" from some witnesses, and non-crossed statements from others. Three appendices contain a good deal of the raw material on which the short provisional report is based. The practical conclusion is that "spiritual healing" is a form of suggestion and is of no value except in "functional" illnesses. The balance of opinion is strongly against "spiritual healers" operating independently of qualified medical men. As the report and the statements by some of the witnesses include positive propositions about "the exercise of the power of God in stirring the inborn spirit of man to higher and fuller life" (p. 14), the Divine Will, the efficacy of prayer, and the like, it is not possible to evaluate the report without an exact analysis of the parts played by those positive propositions, for this would mean a discussion of every important metaphysical concept, a thing impossible here. Substantially, the conclusion is that there is no authenticated case of organic disease cured by "spiritual healing" and that suggestion covers the whole ground. The book is interesting, less as a scientific contribution, which it hardly is, than as an evidence of the growing tendency of the clerical mind to interest itself in scientific method.

W. L. M.

How to Treat by Suggestion with and without Hypnosis: A Notebook for Practitioners. By EDWIN L. ASH, M.D. (Lond.). Mills & Boon, Ltd., 1914. Pp. 104.

This little book does not aim at novelty; it is simply a practical handbook. The exposition is exceedingly simple, well arranged, and well loaded with practical points.

W. L. M.

Introduction à l'Esthétique. By CH. LALO. Paris: Librairie Armande Colin. Pp. 339. Price, 3 fr. 50 c.

Prof. Lalo, is one of the most energetic present-day workers in the field of aesthetics. Three books by him on the subject have preceded the

present work: one on the *Æsthetics of Music*, one on *Experimental Æsthetics*, and one on the *Æsthetic Sentiments*. The present work is a study of the general nature of *æsthetics*, and it is to be followed by a further volume, *L'Art et la Vie*. Prof. Lalo has selected for his main treatment topics of great interest, e.g., the relation between the beauty of nature and that of art, and the relation between *æsthetic theory* and the ideas of various schools of literary criticism. His point of view is broad and well-balanced; he recognises to the full the value of the history of art, of the criticism of art, and of experimental investigations in a general philosophy of beauty. The book forms a useful bird's-eye view of the general sphere of *æsthetics* and is enriched by many appropriate references to French literary critics.

As a general criticism of the book it must, however, be said that Prof. Lalo is too often content with general statements and so does not come to close grips with fundamental issues. Psychological analysis, where used, is not carried far enough. It is, for example, disappointing that one who lays such emphasis on the importance of psychological investigations for the advance *æsthetics*, should give so little in the way of psychological analysis in discussing the difference between our appreciation of the beauty of Art and that of Nature. In this and in other respects it seems to me that there is much lacking in his treatment of the beauty of Nature—which he regards as not truly *æsthetic*, except when we look on Nature as the creation of a great artist. In particular, the discussion of the “beautiful” in Nature as synonymous with the “normal,” appears to me unsatisfactory. In natural scenery surely even the abnormal is often beautiful, and as to human or animal beauty, even if “normality” is necessary for beauty it certainly is not enough to ensure beauty.

Lalo is fond of emphasising the sociological origin of true *æsthetic values*, as well as of the sentiment for Nature—developed through the work of artists who have been the revealers of Nature. But here again the real nature and *modus operandi* of such social influences is not analysed.

In the middle portion of the book Lalo seeks to show how much truth or falsity there is in the doctrines of Impressionism and Dogmatism in *æsthetics*. Scientific *æsthetics*, he maintains, must be dogmatic, but its dogmatism must be relative. Experimental *æsthetics* cannot be content with the statement of individual impressions: it must seek to establish laws; but it does so on the basis of individual judgments, i.e., it recognises the relativity of beauty to the individual. Also *æsthetics* must recognise the relation of our experience of beauty to that of other individuals; i.e., *æsthetics* must take the sociological point of view.

With such somewhat arid conclusions the book closes: one must look for the working out of Prof. Lalo's views more fully in the succeeding volume, *L'Art et la Vie*.

Meanwhile M. Lalo has not made it clear how experimental *æsthetics* can be dogmatic in the sense of setting up *æsthetic values* which ought to be appreciated. Surely all it can do is to say: “You must judge this beautiful if you wish to conform to the judgments of the majority of your fellows, or to that of the most cultivated in a given department of Art”. Also the general dogmatic *conscience esthétique* inductively reached, towards which Lalo seems to be groping, would at least require that the judgments recorded in experimental and statistical inquiries, should be of the form, “this ought to be judged beautiful”. But the form usually recorded in experimental investigation is “this appears to me beautiful,” and this by no means involves the other form of judgment.

Incidentally it is to be regretted that Prof. Lafo has not familiarised himself with the most recent work in experimental aesthetics. Though he states that the work has been especially developed in America and England, he refers only to Vernon Lee among writers in English—and in her case the references are only to articles in the *Revue Philosophique*. He seems to be unaware of the work of Martin and of Puffer in America, and of Bullough in this country

C. W. VALENTINE.

Dr. B. Bolzanos Wissenschaftslehre, Neu Herausgegeben von Alois Hiller. Erster Band. (Hauptwerke der Philosophie in originalgetreuen Neudrucken. Bd. iv.) Leipzig: Felix Meiner, 1914. Erster Band. Pp. xv, 571.

The firm of Meiner has already deserved well of all students by its series of cheap and excellent reprints of classical philosophical texts, but has perhaps surpassed all its former services by this scrupulously exact reprint of one of the rarest and most valuable of nineteenth-century works on logic. Bolzano, though his services to logic rank with those of Boole and de Morgan, has hitherto suffered from almost unparalleled neglect except among a very small circle. Yet he was not merely one of the pioneers of original mathematical thought in the early nineteenth century, but one of the acutest critics of the Kantian philosophy and the "idealist" development from Fichte to Hegel. When the history of the modern science of symbolic logic comes to be written, his *Wissenschaftslehre* will certainly receive recognition as having anticipated a great deal in the later developments of our own time. Meanwhile the acuteness of his criticisms of Hegel and still more of Kant gives his work an independent value even for students who may be wholly indifferent in the special problems of "logistic". In my own opinion at least Bolzano will not have come fully by his rights until he is generally recognised as a metaphysician of the very first order—the true and worthy successor in German thought of the great Leibniz. It is deplorable to think that the present European upheaval may conceivably delay, even if it does not prevent, the issue of the three remaining volumes of his *opus magnum*.

A. E. TAYLOR.

La Morale al Birio. By ZINO ZINI. Turin, 1914. Pp. 174.

A brief discussion of the fundamental questions of Ethics. Mr. Zini's general attitude is neo-Kantian, though the apotheosis of the State with which he concludes is definitely Hegelian. Ethics, he holds, is properly the "science of man" or "science of the concept of man". What man is is only fully revealed to us in the notion of universal and binding duty. As concerned with this notion of duty, ethics is not a science of "being," but of "value," and the individual and his destiny are not objects for ethical science. The autonomy of the moral will is equally ignored by those who make ethics into a naturalistic study of the origin and growth of customs and those who introduce the conception of God as the source of the moral law or the final good of creatures. The good-will is neither the will of God nor the actual (Kant would say the pathological) will of any human individual but the purely "universal" will of abstract "humanity". Yet Mr. Zini, in a brief concluding chapter, identifies this ideal will of humanity with "the State" and urges us to return to

the "Platonic tradition" from the misleading Christian conception of the "mystical body of Christ".

There is much that is interesting in Mr. Zini's little book, and much with which all moralists, except those who identify their study with naturalistic anthropology, must agree. Yet I must say he does not strike me as very convincing in his arguments for some of his central positions. I find it hard, *e.g.*, to believe that our conception of our own personality logically presupposes a prior recognition of the personality of others, and Mr. Zini's attempt to establish the point by an argument based on Kant's theory of the "infinite judgment" is to me quite unintelligible. And again I think there is a real inconsistency between the pure neo-Kantianism of his earlier chapters and the Hegelianism of his deification of the State as a real embodiment of the good will. If considerations of fact and considerations of value are to be as utterly sundered as he maintains when he says that Ethics must not deal with the question of God or of immortality because "what happens" to any man or to all men is only *fact* and has no bearing on the theory of values, I do not see how it can be of any concern to the moralist that a "will of humanity" which appears to be only another name for the system of ethical values should be actually embodied in an existing institution. Indeed it is no more correct to call the system of moral values a will than it would be to call a collection of mathematical or physical truths an intellect. Either it is essential to ethics that there should be a will that actually wills the system of ideal values or it is not. If it is not the argument for the worship of the State falls to the ground, if it is, the Theist cannot be dismissed so cavalierly as he is by Mr. Zini. And if we grant the point that it is important that the universal good will should have an embodiment, why should we identify the State with that embodiment? Surely it is manifest that the organised bureaucracy is very far from being an adequate embodiment of the spirit of morality—at least as far as any actual "Church" is from being an adequate vehicle of the "spirit of Christ". To me, for one, it is inconceivable how Mr. Zini can rate, as he seems to do, respect for the rights secured to individuals by a legal code higher in the scheme of moral values than "the dear love of comrades". A *rector magnificus* of the University of Berlin might find it convenient to identify the will of God with the will of the Prussian bureaucracy; surely the events of the last few months should make us think twice before we regard the Hohenzollern *Machtstaat* as the "*termine fisso d'eterno consiglio*".

A. E. TAYLOR.

Wissenschaft und Wirklichkeit. By MAX FRISCHEISEN-KÖHLER. Leipzig und Berlin: B. G. Teubner, 1912. Pp. viii + 478. Price M. 8.

This exceedingly well-written volume may safely be recommended to all those who wish to inform themselves about the drift of speculations on knowledge, experience, and reality among the various schools of thought in Germany at the present day. For non-German readers, interested in this philosophical problem as a whole, and not merely in the German treatment of it, this restriction to German writers exclusively will detract considerably from the value of the book. The author is a disciple of Dilthey, and mainly concerned to defend Dilthey's standpoint by contrast with that of Erdmann, the Marburg School, Riehl, Rickert, Windelband, Münsterberg, and others. Within these self-chosen limits his treatment is clear, competent, and interesting. His accounts of the arguments which he criticises strike me as accurate and fair,

and they are entirely free from the polemical bitterness which occasionally mars discussions of this sort. The author's comments are generally marked by their good sense and an agreeable level-headedness of judgment. But even though the book, being volume xv. in the series entitled *Wissenschaft und Hypothese*, is addressed to the general reader rather than to the academic expert, the complete ignoring of English, French, and Italian contributions to the discussion of its subject is a regrettable defect. A tendency to become *self-centred*, to neglect work done outside Germany, to be absorbed wholly in the mutual rivalries of German schools (not to say cliques) has, of recent years, become increasingly evident in all branches of German University work, and reacted injuriously on the intellectual outlook of the whole people, as the war amply shows. One is sometimes forced to think that J. S. Mill and H. Spencer are the last English philosophers whose views are ever noticed by German University professors—a state of things which is wholly Germany's loss.

Prof. Köhler has divided his book into two parts. The first, entitled *Transcendental Idealism*, reviews in three chapters, (i.) The Critical Standpoint, (ii.) Logical Idealism, (iii.) the Philosophy of Values, the work of the various Neo-Kantian and Neo-Post-Kantian schools in Germany, the author's endeavour being to establish that 'reality' (*Wirklichkeit*) is neither a category of pure thought, nor a valuation, but is something more fundamental than either of these, something which supplies both background and substance to all thinking and valuing, something which is 'given' or 'lived' (*erlebt*)—in short, as Mr. Bradley and others have taught English thinkers to say, immediate experience. The second part, entitled *Phaenomenology of the Consciousness of Reality*, deals in three chapters with (i.) the Standpoint of Consciousness, (ii.) Self and Outer World, (iii.) the Concept of Empirical Reality. In this part the author sets himself to trace in detail, first, 'die Erlebnisgrundlagen unsers Wirklichkeitsbegriffes,' next, the way in which thought elaborates, expands, and supplements reality as immediately experienced.

The most curious and interesting point about the author's argument is that he thinks it necessary to start from a Solipsistic position, so that the main problem is to account for our 'gemeinsame Erfahrungswelt,' and to furnish a 'deduction' (in the Kantian sense) of the objective validity of the *a priori* principles of science. The author is emphatically not a Solipsist in his conclusions; in fact, he offers an explicit refutation of Solipsism on the grounds that 'my' experience can be determined only as a section of an infinite totality (p. 294) and that, even in immediate experience, I am always aware of the contrast of self and not-self (p. 273 and elsewhere). This being so, it is the harder to understand why he repeatedly insists on the necessity of starting from a Solipsistic position, and treating the existence of other Selves, and of the Not-Self in general, as 'problematic'. Again and again he affirms that philosophical reflexion must start with 'my own' experience, that the 'given' is 'limited to the sphere of my Ego' (e.g., p. 254), and that this relation to my Ego is 'phenomenologically ultimate,' but I can discover no argument establishing this ultimacy in any way, which would not show the Not-Self to be equally ultimate. Moreover, from the position that 'every knowing subject is shut up within the circle of his own experience' (p. 314), the author, monadistically, infers that the circles of different subjects cannot possibly coincide or overlap. He realises that this leaves on our hands the tremendous problem of language and inter-subjective intercourse (p. 315), but the elaborate argument which he then offers to show that we have the right so to conceive the

world as to make it possible for the individual to pass from the 'subjective' circle of his experiences to the 'objective' standpoint of a whole of reality including all individuals—this argument seems to me unconvincing just because there is no need for it except for the author's arbitrary starting-point. The central principle of his position, however, possesses a genuine interest of its own, apart from these wrestlings with Solipsism. It is that we ourselves are real in that we act and will; that through the resistance with which our will meets we first are led to acknowledge a reality other than ourselves; and that the realisation of our ideas in action is the decisive criterion for their 'truth' and 'objective validity' (p. 353). The German language facilitates this view because its term for 'reality' (*Wirklichkeit*—actuality) is derived from the same root as the verb to 'act' (*wirken*).

R. F. A. H.

Il Problema delle Scienze Storiche. Da ENRICO DE MICHELIS. Turin, 1915. 8vo. Pp. xii, 390.

The work of Signor De Michelis is largely occupied with a criticism on Prof. Rickert's elaborate and profound investigation into the distinction between the sciences of nature and of history, reviewed by Mr. Herbert Blunt in *MIND*, New Series, vol. xxiii., pp. 425-428. The Italian philosopher is copious in his acknowledgments of Prof. Rickert's depth and subtlety; but his comments are on the whole rather adverse—that is to say on the epistemological side; both writers, were they set to compose a general history or any particular national history, would follow pretty much the same general method, the method, let us say of Guizot or of Lecky. To understand their characteristic differences it will be necessary briefly to recapitulate the relative philosophy of Prof. Rickert.

History, according to the German Professor, is a science in this sense that historians should have for their object, just like physicists, the rigorous and precise ascertainment of facts. But the facts themselves are in each case of a different order. According to the ideas of many thinkers they are distinguished as severally dealing, the one with matter or unconscious substance, the other with conscious mind. But this is a mistake. Psychology is a mental science, but it is studied on the same principle as the material sciences—say physiology. Both alike whether material or physical have for their object the ascertainment of laws; and this is equally true of psychology and of mechanics. Memory, for instance, is a conscious process, but it is a law of nature that memory should be strengthened by association and repetition; it is proved just like the laws of chemical combination; and like them it is verified in any number of cases, one being as good as another. But truly historical cases are absolutely unique of their kind; there never has been anything just like them before, nor will there ever be anything just like them again. Now a closer examination of the physical sciences discloses the fact that no one of the phenomena with which they deal is exactly like another. On the one side they, practically, extend to infinity and are therefore not amenable to scientific inspection. On analysis also they seem to be infinitely differentiated among themselves. Reality in short is an endless mass of biographical detail. The concepts and laws by which we introduce a sort of uniformity into nature are obtained by giving exclusive attention to the resemblances of phenomena at the expense of their differences. They are, so to speak, artificial and fictitious; actual reality being found only in history.

Nevertheless history, no more than nature, can be studied in its

entirety. From the endless variety of nature we are enabled to select the facts that constitute knowledge by the ascertainment of concepts and laws which cannot owing to the diversity of its content be found in history. Prof. Rickert solves the problem of selection by introducing the concept of Value. And historical values determine themselves as so many different forms of Culture. Common language presents culture to us in its most elementary form as an improvement of the soil and of its produce—in Swift's words, making two blades of grass grow where only one grew before. This at once marks it as a departure from nature, not of course in the sense of aberration but in the sense of improvement. So understood history covers all the arts, war and government being included among the number; and not the arts only but religion, science, philosophy, social intercourse, and æsthetic production also.

Signor de Michelis endeavours to dissolve away this absolute distinction between natural science and history, which in his opinion the majority of philosophers also refuse to admit. According to him laws of nature are not the artificial abstractions to which Rickert would reduce them; their characters of universality and necessity are not conditioned by suppressing the reality of things in themselves, but are the essential properties of what actually exists. Neither can abstract views of reality be excluded from human history. For instance, the Glacial Period and the Stone Age are only known as we know the truths of geology. More than this: the Middle Ages and the Renaissance are known only as a series of general facts. Again, history is largely determined by geographical conditions. These act as constant causes, remaining practically the same in space and time. As to culture-values they have not the power claimed for them by Prof. Rickert of controlling the selection of historical narration in the same way that the search for physical concepts and laws controls the investigation of material phenomena. Doubtless his postulate of a perfectly disinterested, objective valuation seems to insure a similarly disinterested study of the facts involved. But as Signor De Michelis justly observes, the historian's varying estimate of what constitutes a value and its progressive movement will inevitably affect the number and colouring of the details chosen to elucidate its evolution. And, talking of evolution, one may be permitted to refer—as the author does not—to Schopenhauer's theory of the part played by 'happy accidents' in the development of an ape (or rather of its embryo) into something human. 'Natura facit saltum' as Darwin said. Now the 'saltus' is a historical event.

ALFRED W. BENN.

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- Annual Report of the Board of Regents of The Smithsonian Institution showing the Operations, Expenditures, and Conditions of the Institution for the Year ending June 30, 1913*, Washington, Government Printing Office, 1914, pp. xi, 804.
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VIII.—PHILOSOPHICAL PERIODICALS.

BRITISH JOURNAL OF PSYCHOLOGY. Vol. vi., Parts 3 and 4. **William Brown.** 'Freud's Theory of the Unconscious.' [A Critical Exposition of some fundamental ideas of the Freudian Psychology, especially those contained in the last chapter of the *Traumdeutung*, with a comparison between McDougall's psycho-physical theory of inhibition and some of Freud's ideas.] **T. H. Pear.** 'The Analysis of Some Personal Dreams with Reference to Freud's Theory of Dream Interpretation.' [These analyses of two dreams of the writer support some of the main points of Freud's theory of dreams and afford samples of 'dramatisation,' 'symbolism,' 'condensation,' 'displacement' and 'superficial association' in dreams. But they afford no evidence that unconscious and infantile wishes are essential causes of a dream.] **Carveth Read.** 'The Conditions of Belief in Immature Minds.' [Compares the imaginative beliefs of savages to "play-beliefs". Their utility is that they afford some emotional satisfaction and the rites connected with them serve as games. The idea that imaginative beliefs give rise to scientific ideas is criticised.] **Frank Smith.** 'An Experimental Investigation of Perception.' [The process of perception was found to begin with an immediate interpretation of the object, however brief the exposure of the object to vision. Persons of scientific training showed superiority in the method of analysis (but only nine out of thirty-two subjects were science students). Some persons with a strong tendency to subjective perception were also marked by a prominence of self-active imagery. Others with whom imagery was of little importance were little influenced by subjective factors in perception. Children of six years had no power of analysis of object and were very passive to suggestion. Secondary school children of twelve years had many powers and methods of adults, but children of twelve from a slum school were much inferior and were more liable to suggestion.] **C. W. Valentine.** 'The Colour Perception and Colour Preferences of an Infant during its Fourth and Eighth Months.' [New method of investigation described. Evidence afforded that an infant of three months may experience sensations of red, yellow, brown, green and blue. Suggestion made that preference is determined partly by brightness but also partly by power of colours to stimulate the organism, this being greatest in the case of colours at the red end of the spectrum. Signs of positive aversion from violet.] **T. H. Pear and Stanley Wyatt.** 'The Testimony of Normal and Mentally Defective Children.' [Evidence of children (ages, eleven to fourteen years) usually reliable only when given spontaneously. Then it is decidedly valuable, but in interrogated evidence it is much less reliable. Evidence as to actions was better than that as to qualities. Suggestibility increased with lapse of time between event and giving of evidence. No correlation found between general intelligence and suggestibility or resistance to it. Both sexes equally liable to suggestion. Individual differences less between children from school where discipline was very rigid. Mental

defectives gave fragmentary account of event, ignored chronological order, answered every question, and could not estimate lapse of time.] **Chas. Fox.** 'The Conditions Which Arouse Mental Images in Thought.' [An experimental investigation showing that any delay or conflict of ideas in the thought processes tends to arouse relevant imagery which may help towards the cessation of conflict. The contrary set of conditions is unfavourable to the production of images. Irrelevant images may occur under either set of conditions. It is suggested that children have more vivid imagery than adults because of more frequent difficulties in abstract thought.] **Godfrey H. Thomson.** 'On Changes in the Spatial Threshold during a Sitting.' [Threshold found to fall sharply at first, then slowly, and later to rise again—due, it is suggested, to "end-spurt".]—Vol. vii., No. 1, May, 1914. **Henry J. Watt.** 'Psychological Analysis and Theory of Hearing.' [After a preliminary discussion as to views concerning the quality of sounds, the significance of pitch (in which appears the author's view that pitch is the analogue of local sign in vision and touch and that there are no differences of quality in sounds at all), and of the aspects of tone within pitch, the author proceeds to set forth his own theory of sound including a new interpretation of the functions of the basilar membrane, and to compare it with those of Helmholtz, Ewald and ter Kuile.] **Godfrey H. Thomson.** 'The accuracy of the $\Phi(\gamma)$ Process.' **Rossiter Howard.** 'A Note on Pictorial Balance.' [A critical consideration of the assumption that the right and left sides of a good picture "balance" one another—including an analysis of some famous pictures.] **N. Carey.** 'An Improved Colour Wheel.' **C. S. Myers** (with contributions by **C. W. Valentine**). 'A Study of Individual Differences in Attitude towards Tones. [Attitudes towards tones discovered similar to those already found in perception of colours, viz., intra-subjective, objective, character and associative. Their dependence upon single tones and bichords and upon the height of tones is discussed and also their æsthetic value.] **Charles S. Myers.** 'Two Cases of Synesthesia.' [The first is the case of the Russian composer Scriabin, whose chromesthesia is dependent upon the tonality of the music. The second case is that of a lady painter, with whom the colour of a musical composition varies with the composer, that of individual tones varying with the pitch.] **C. W. Valentine.** 'The Method of Comparison in Experiments with Musical Intervals and the Effect of Practice in the Appreciation of Discords.' [Method of comparison as a method in æsthetic appreciation is unsatisfactory. Several subjects showed adaptation to discords in prolonged series of experiments, even preferring discords to concords at the end of the series.]

JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS.—xii., 8. **J. T. Shotwell.** 'The Discovery of Time,' I. [On the beginnings of the calendar out of the practical needs of farming.] **H. B. Alexander.** 'Justice and Progress.' ["Law, right and justice find their fundamental sanction in the assumption of human progress" which "is to the logic of morals what the assumption of the uniformity of nature is to the logic of science". Both are "articles of faith, neither is obvious fact and neither rests upon compelling reason".] **E. C. Parsons.** 'The Aversion to Anomalies.' [Starts from anthropological evidence of intolerance towards anomalies, and argues to the conclusion that to make the anomalous suffer is wanton cruelty.] xii., 9. **T. de Laguna.** 'The Postulates of Deductive Logic.' [Examines the use of and principle of deduction and the principle of substitution in mathematical logic in order to show that "for deductive logic the interpretation of the symbols is logically prior to all else, for without that all else is non-

sense," and so that "it cannot cast itself entirely loose from the external connexions of common language and its consequent unclearness".]

D. Drake. 'Practical *versus* Literal Truth.' [On "the danger of taking a practical truth for a literal truth" and rejecting it accordingly as false, especially in religious contexts.] **A. T. Poffenberger.** Report on the New York Branch of the American Psychological Association. xii., 10. **J. T. Shotwell.** 'The Discovery of Time,' ii. [Traces the development of the calendar to the religious interest in determining *lucky* days, points out that astrology formed the unique case where the supernatural was calculable, and explains the importance of the moon in reckoning time.] **G. C. Cox.** 'Professor Adams and the Knot of Knowledge.'

[A protest against the omission of Avenarius as an alternative to realism and subjectivism. The reference to G. P. Adams's article should be to xii., 3, not, as printed, to iii., 3.] xii., 11. **H. A. Overstreet.** 'Conventional Economics and a Human Valuation.' [A review of J. A. Hobson's *Work and Wealth*, which outlines "a humanising of the current economic definitions of utility, cost and value," and their application to production, consumption and distribution.] **G. C. Cox.** 'Individuality through Democracy.'

[A plea for a real democracy giving an opportunity for self-development, as the 'Anglo-American' view of the individual, as against the 'Teutonic' and Platonic view.] xii., 12. **J. T. Shotwell.** 'The Discovery of Time,' iii. [Discusses the Egyptian and the Babylonian calendar.] **R. W. Sellars.** 'A Thing and Its Properties.'

[Knowledge of physical things "must not be interpreted in terms of the distinction between substance and its accidents which is a false form or category nowhere justified by experience and actually resulting from bad logic, bad psychology and bad theory of knowledge". But "the essential realistic attitude of common sense can be retained".] xii., 13. **J. Dewey.** 'The Subject-matter of Metaphysical Inquiry.'

[Concerned "to indicate one way of conceiving the problem of metaphysical inquiry as distinct from that of the special sciences, a way which settles upon the more ultimate traits of the world as defining its subject-matter, but which frees these traits from confusion with ultimate origins and ultimate ends—that is from questions of creation and eschatology. The chief significance of evolution with reference to such an inquiry seems to be to indicate that while metaphysics takes the world irrespective of any particular time, yet time itself, or genuine change in a specific direction, is itself one of the ultimate traits of the world irrespective of date." Moreover, though "the existence of vital, intellectual, and social organisation makes impossible a purely mechanistic metaphysics" . . . "it does not signify that the world 'as a whole' is vital or sentient or intelligent".] **S. H. Diggs.** 'Relation of Race to Thought-Expression.'

[Argues that though "all modern races are unquestionably blends," "races and peoples differ quite as much in their mental as in their physical make-up" and have "inherently different mental-sets," as is shown in their language, literature, institutions, material civilisation and religion. Thus Negro-English is entirely different from white-man's English (the author hails from Virginia), no copied literature can be great (*cf.* Latin), no Spanish-speaking people can have a republic in the American sense, all English-speaking countries are essentially republics of the same type, religion is racial and "psychologically speaking Christianity is neither Semitic nor Asiatic," its founder being "what biologists call a *sport*". It looks as though together with so many other German ideas their race-theorising were going to impose its extravagances on the Anglo-Saxon intelligence.] xii., 14. **E. B. Holt.** 'Response and Cognition.'

[“Having ignored the *objective functional reference of behaviour*, we are led into the superstition of 'ideas' in the 'sensorium' which have an

'objective reference' to the environment." But "the only scientific view of it must be in terms of ionised nerve and twitching muscle". 'New realism' thus confesses its materialism through Prof. Holt.] **A. H. Lloyd.** 'Kant and after Kant.' [An attempt "to translate the old-time Kantian Transcendentalism into the recent creative evolution".] **E. Guthrie.** 'Russell's Theory of Types.' [Objects that it is not consistently worked out.]

"SCIENTIA" (RIVISTA DI SCIENZA). Vol. xv., No. 6, November, 1914. **E. Rutherford.** 'The Structure of the Atom.' [A short and able account of modern work on the subject.] **G. Bugge.** 'Physikalische Eigenschaften und chemische Konstitution.' [Account of modern work on the relations indicated.] **C. Golgi.** 'La moderna evoluzione delle dottrine e delle conoscenze sulla vita. Parte II^a. I problemi fondamentali psico-fisiologici.' **W. Deonna.** 'Qu'est ce que l'archéologie?' [It is a historical study which continues a psychological and physiological study of the forms of art.] Critical note. **A. Mieli.** 'La méthode Galiléenne et les sciences biologiques.' [Continuation of the author's note in the May number of *Scientia*. It is concerned with Rádl's opinion, in his *Geschichte der biologischen Theorien der Neuzeit* (2nd ed. Leipzig and Berlin, 1913), of the relations between the development of the biological sciences and the mechanical method of which Galileo was one of the greatest champions.] Book reviews. General reviews. **M. Davidson.** 'L'excentricité de l'orbite de la Terre et son effet direct sur le climat.' **A. Kronfeld.** 'Les tendances principales de la psychologie allemande contemporaine.' Review of Reviews. Chronicle. French translations of the English, German, and Italian articles. The first number of the next volume will be published in January, 1915, and will contain a new and unexpected feature. In the present European war, *Scientia*, true to its scientific and international character, has decided to emerge from its 'ivory tower of abstract synthesis' and to invite 'the most eminent philosophers, historians, socialists, economists and jurists,' to treat thoroughly the question of the war and its causes. These authorities have been chosen from both of the opposing camps and also from neutral countries, and have either already sent their studies to *Scientia* or will soon do so. The object of this inquiry is to conduct an objective and calm investigation into the causes and sociological factors of the war; and not only will this inquiry be of great scientific interest, but it will also be of supreme and vital practical importance; for from this analysis we shall be able to conclude if, and in what way, the present war can, for the good of humanity and civilisation, preserve us for ever from other wars. Thus with the next volume *Scientia* will—for the present at least—appear every month instead of every two months, and, as usual, there will be a supplement containing French translations of the English, German, and Italian articles. Vol. xvii., No. 1, January, 1915. **A. C. D. Crommelin.** 'The Capture Theory of Satellites.' [Critical remarks on T. J. J. See's capture theory as exposed in vol. ii. of his *Researches on the Evolution of the Stellar Systems*.] **E. Rignano.** 'Le forme superiori del ragionamento. Parte I^a: Il ragionamento matematico nelle sue fasi del simbolismo diretto e indiretto.' [Continuing the author's three articles in *Scientia* of 1913, this article contains an examination, strictly from the psychological point of view, of the logical process in its highest forms, that is to say, in mathematical reasoning. The results of this inquiry verify the results previously obtained. Four phases in the evolution of mathematical reasoning are chosen: those of direct symbolism, of in-

direct symbolism, of symbolic condensation, and of symbolic inversion. The two last phases will be treated in a second part.] **La Direction.** 'L'enquête de *Scientia* sur la guerre.' [Practically the same as the announcement at the end of the previous number of *Scientia*.] **L. Lévy-Bruhl.** 'Les causes économiques et politiques de la conflagration européenne.' [Occupied with the study of the 'causes' of the war in the sense in which the historians usually take this word: *i.e.*, the examination of the conditions which determine events and which show themselves in the sentiments, the ideas, the passions, and the needs of individuals and peoples. The failure of Germany in making Alsace and Lorraine German, the Balkan question, the fact that Germany has no colonies to speak of, and some national characteristics are thus shortly treated in turn. Germany was the chief cause and aggressor, but the political and economical conditions in Austria helped.] **W. J. Ashley.** 'The Economical Side of the European Conflagration.' [Careful examination of the economic aspect of the war. Difficult as Germany's economic position is, it is not so difficult as to compel, by itself, a speedy termination of the war. Still, assuming that the Allies will win at last, 'the longer the war lasts the worse it will be for Germany, economically as well as politically. The longer it goes on, the more it will be straitened in its economic activity when peace returns. England has hitherto afforded Germany an elbow-room which has been highly convenient to it in the alternating expansion and contraction which form the cyclical movements of trade. This is very apparent to any one who looks into its industrial history and learns how it was it escaped so lightly from the great depression of 1901-1902. That elbow-room is going to be taken from it, and the more completely the longer it waits.'] **W. Wundt.** 'Deutschland im Lichte des neutralen und des feindlichen Auslandes.' [Wholly occupied with an anti-German article by the Norwegian Gerhard Gran and a letter from the Frenchman Th. Ruysen, both of which criticise the author's pronouncements on the war. 'In this war Germany has only a few friends in foreign countries. . . . Even in neutral countries there is an unjustifiable feeling of aversion (*einer durch nichts gerechtfertigten Abneigung*) for Germany.' After this, it is interesting to read, in the above article by Lévy-Bruhl: 'The French people believe only too willingly that they are liked; the German people are persuaded that they are not liked. This last conviction, whether founded or not, does not make them more likeable. They imagine that they are envied or jeered at. They tend to believe that other people are always trying to wrong them.'] Critical Note. **A. Mieli.** 'Le réveil récent des études d'histoire des sciences et sa signification.' [The review *Isis*, which was until lately edited by George Sarton in Belgium, represents better than any other document the state at which the history of science has now arrived; this state is of reflexion and criticism, synthesis and philosophy. This note is general in character, and a more detailed examination of *Isis* will be published later.] Book reviews. General Review. **H. Piéron.** 'L'attitude objective dans la psychologie moderne.' [With special reference to Bechterew's recent work.] Review of Reviews. Chronicle. French translations of Italian, German and English articles. Vol. xvii., February, 1915. **J. Constant.** 'Les lois de l'hybridation et l'action du milieu.' [Attempts to find out if the Mendelian conceptions are attackable or not. Heredity in mutation is both very stable and very instable, since a change of country brings the loss of a property which appeared, by experiments repeated in other countries, solidly established. These variations seem in agreement with the variations of nuclear cytology. There seems to be a very great difference between the new heredity of mutation and the heredity established by the secular action of the environ-

ment.] **E. Rignano.** 'Le forme superiori del ragionamento. Parte II^a. : Il ragionamento matematico nelle sue fasi di condensazione ed inversione simbolica.' [Continuation of the author's article in the January number. This part contains a rapid sketch of two phases of mathematical reasoning: In the infinitesimal calculus grew up and developed the habit of making many similar operations correspond to one symbolical expression; this phase of symbolism is here called 'condensation'. Symbolic inversion consists in the fact that a geometrical object represented by a given algebraic expression becomes a symbol, in its turn, of other analogous algebraic expressions which do not represent any geometrical fact. In the next and last part, the author will state his conclusions about the relations between mathematics and mathematical logic. It must be remembered that this series of articles is written from a purely psychological point of view.] **The Enquiry upon the War. A. Landry.** 'Les origines, les causes, les lendemains de la guerre actuelle.' [The war was the deed of Germany, not of Austria nor of any other country. Neither honour nor interest impelled Germany to the war, and yet she had prepared for it with incredible minuteness. It is in pathological phenomena of collective psychology that we must seek for the explanation of the war; and not in motives of an economical kind, such as over-population, which have not at present a great influence in Germany. 'There are reasons for hope in the future. Perpetual peace is after all only an ideal of which nothing guarantees us the realisation.'] **O. Lodge.** 'The War from a British Point of View.' ['Considered from our point of view the war is seen to be a war of ideals, a conflict between two ideals of government—the English ideal of a commonwealth of nations . . . and the Prussian ideal of a single glorified State.' Since 1870 the great men of Germany have been few. 'The errors which are now supreme in Germany are: first, a glorification of war, based on a misreading of Darwinism; and, second, an enthronement of mere power, a belief in the unmoral supremacy of the State.'] **G. von Below.** 'Militarismus und Kultur in Deutschland.' [Some of the adversaries of Germany either condemn German culture or German militarism. But without militarism there would be no German culture.] **Book Reviews. General Review. G. Stefanini.** 'Sur l'histoire géologique de la Méditerranée.' French translations of the German, English and Italian articles. Vol. xvii. No. 3, March, 1915. **F. Frech.** 'Die Salzseen Anatoliens und ihre Bedeutung für das Problem der Entstehung der Salzstöcke der Erdrinde.' **E. Rignano.** 'Le forme superiori del ragionamento. Parte III^a: Matematiche e logica matematica. [After a summary of the conclusions which the author's two previous articles allow him to draw about mathematics in general and the function that symbolism has had in them, the author passes to a comparison between mathematics and the other and newer great branch of higher reasoning known as 'mathematical logic'. The same marvellous fertility that symbolism in mathematics properly so-called has shown is not to be expected of mathematical logic, and the exaggerated pretensions of Russell and Couturat that mathematical logic alone is enough to construct all mathematics, 'without having any need of ultimate inductions,' cannot be admitted. It may be permitted to the reviewer to remark that this is another instance of the confusion in the thought of many people between the logical point of view of Russell and Couturat and the psychological point of view, which is that of the author. From his point of view the author defines mathematics as 'the science in which the experiences simply thought and constituting the reasoning in it are of a very general quantitative (or we may add ordinative) nature which is capable of rendering the most various physical phenomena equivalent with respect to the results that they give.] **The Inquiry**

upon the War. **V. Pareto.** 'La guerra e i suoi' principali fattori sociologici.' [Tries to develop wholly objective considerations and to give an account only of facts, relations of facts, and their uniformities. An admirable and judicial article.] **W. J. Collins.** 'The Ætiology of the European Conflagration.' [The deeper origin of the war is in a conflict of two opposed conceptions of the functions and ideals of the state and the significance and nature of international engagements. One of these conceptions 'is characterised . . . by the dominion of the material, the physical, the mechanical and the merely intellectual over the ideal, the ethical, the moral, and the spiritual. The exaltation of Science as the supreme or only knowledge, the denial of the intuitive and transcendent, the negation of free-will, the subordination of liberty, the deprecation of the altruistic are its natural offsprings and exhibit an unlovely family kinship among themselves.' With regard to the attitude towards the teachings of religion by those who hold these views, we read: 'One group by specious employment of casuistry discovers that never was there a religion more combative than that of the author of the sermon on the mount, and that war receives its moral justification from the inspiration of the Christian faith. Another group, with greater candour, recognises the hopeless incompatibility of the new cult with the altruism and compassion of Christianity: they are accordingly prepared to clear away the accumulated rubbish of twenty centuries and replace it with a brand-new religion for Super-men promulgated by superior persons under the patronage of an Erastian State.' The people who hold the opposite conception are not dealt with.] **E. Meyer.** 'Englands Krieg gegen Deutschland und die Probleme der Zukunft.' [An interesting article from the point of view of evidence. 'Nobody in Germany doubts that England is our mortal enemy and has brought this war upon us for her own interests. . . . This conviction comes from the depths of the national soul. . . . There can be no doubt that the English Government has deliberately provoked this war. . . . King Edward VII., a German by descent, paved the way for it. . . . The pretext of the *pourparlers* of 1906 between military *attachés* of Belgium and England was naturally the fiction that Germany would not respect the neutrality of Belgium.' Compare what follows with the preceding article. 'The conflict,' says the present author, 'also is really between two opposed conceptions of the state: for the German, liberty means the spiritual and spontaneous development of his own personality, and consequently complete independence, not reached by the Englishman, of "public opinion," but subordination to the interests of the community, of the ideal ends of his nation.' German politics 'is inspired by idealism and a conscience of duty'.] Critical note. **G. Chatterton-Hill.** 'L'esprit de l'Allemagne moderne d'après les *Œuvres choisies* de Treitschke.' [On Treitschke's *Ausgewählte Schriften*.] Book Reviews. Review of Reviews. Supplement containing French translations of the Italian, English and German articles.—Vol. xvii., No. 4, April, 1915. **A. Mieli.** 'La posizione di Lavoisier nella storia della chimica.' [We cannot hold the current opinion about the place of Lavoisier in the history of chemistry, but still his merits are not diminished. Instead of inaugurating a period, Lavoisier closed a period beginning with Boyle. He used and followed up the works of his predecessors, but of course is no more to be called a plagiarist on this account than is Galileo or Newton. His work made possible the rise and growth of new problems, but in the establishment of the solutions of them he had no share.]

IX.—NOTE.

OCCAM'S RAZOR.

It seems clear, as Mr. Thorburn has shown (*MIND*, vol. xxiv., N.S., No. 94), that Ockham, even if he ever used the phrase "*Entia non sunt multiplicanda*," etc., certainly preferred "*Pluralitas non est ponenda*". The usual form of the 'razor' seems very clumsy. I have never myself found it in any work of Ockham's; but it is quite possible that he did use it. In any case his preference for the form "*Pluralitas non est ponenda*" is very reasonable, in view of his complaint against Scotus that the 'doctor subtilis' created imaginary things which did not exist. "*Entia non sunt multiplicanda*" seems to be a rule about "real things": it seems to imply that one could "multiply" them. But, Ockham might say, if you try as 'hard as you like,' the mind cannot bring any object into existence nor, by knowing it, make any difference to the object known.

"*Pluralitas non est ponenda*" would mean "You must not *suppose* that more things exist" than you have evidence for. And in the same way "*Frustra fit per plura quod potest fieri per pauciora*" means that an explanation is useless of what is already explained. This phrase, by the way, may be found in the treatise "*de Sacramento altaris*" (p. 3) besides the places referred to by Mr. Thorburn.

The force of Ockham's objection against Scotus was that logic and metaphysic were distinct. Both the thing and the universal are "*entia*," one "*in re*" the other "*in mente*". Only a Scotist could think that the law of parcimony had anything to do with "*entia*". This is perhaps a mere matter of words; but words to a man like Ockham were not unimportant, and he was very careful with his original razor to make it cut only *hypotheses* (ponere, etc.). As a hit at Scotists he might have said "You must not make so many realities"; but in his philosophical argument he never seems to have forgotten his original contention that "*entia*" are quite untouched by logic.

C. DELISLE BURNS.



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MS. and other Communications for the Editor, except those from America, should be addressed to Professor G. F. STOUT, The University, St. Andrews. All American Communications should be addressed to Professor E. B. TITCHENER, Cornell University, Ithaca, N.Y. No contribution reaching the Editor later than 8th December next can appear in the January Number of MIND.

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